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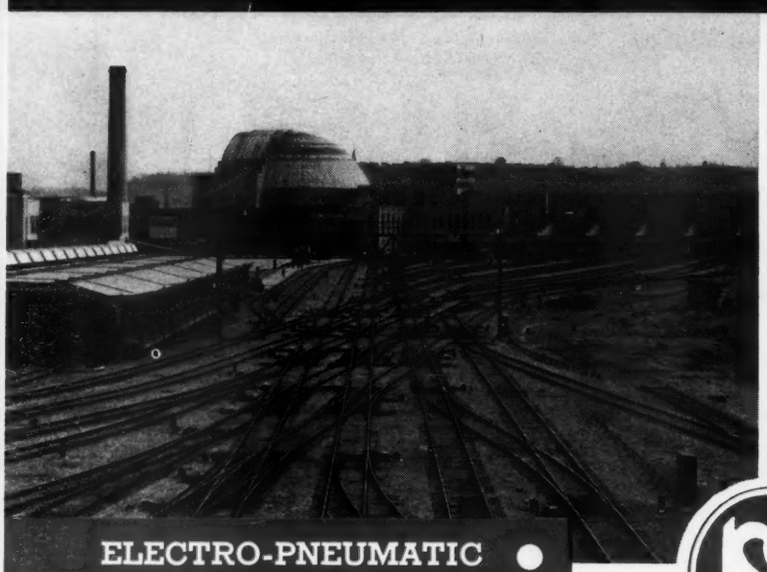

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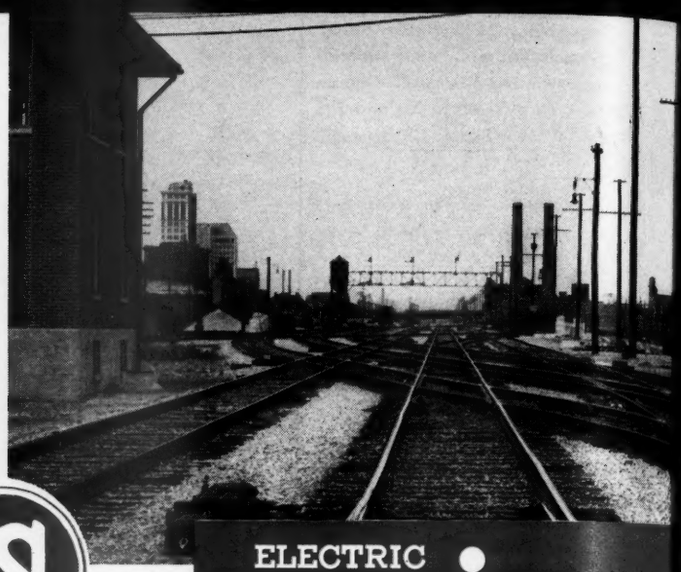

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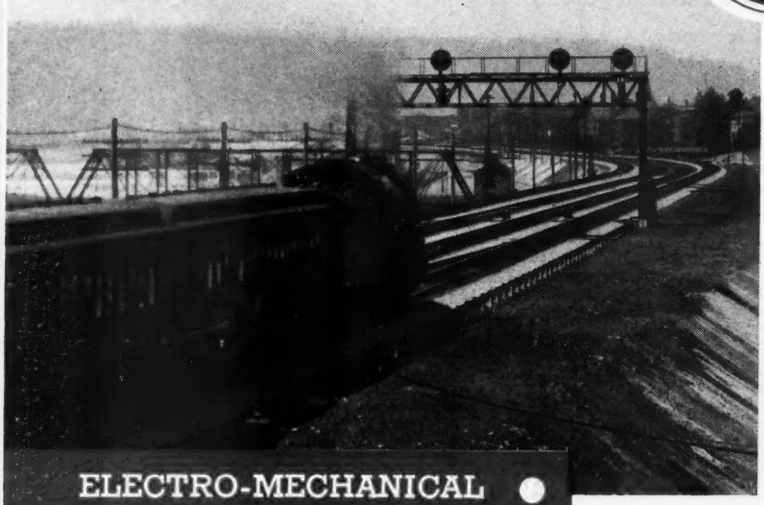

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Preparedness—Railroads and the Army

Almost everything that occurs now affords a certain kind of public men and business men an argument to show there is something the matter with the railroads which only more government interference with transportation can remedy.

For more than sixteen years the railways have had surplus capacity which almost constantly throughout the last ten years has been very large. The existence of this large surplus capacity repeatedly has been used during the depression as an argument to show that the big investment made during 1923-1930 to prevent recurrence of previous "car shortages" was a managerial mistake and provided an excess of facilities. Nevertheless, knowing that during the depression the number of locomotives and freight cars had greatly declined, high officials of the federal government began raising questions last spring regarding whether, in case of war, the capacity of the railways would prove adequate under private operation, and intimating that government operation might become necessary. This in spite of the fact that actual government operation in war in 1918 and subsequently in 1919 resulted in almost no increase in traffic handled and in enormously greater operating expenses than probably would have been incurred under private operation.

Railroads Handle a 55 Per Cent Increase of Traffic

Because of these government inquiries, an authoritative estimate was made last May on behalf of the railways that with all existing equipment in good repair they could handle 45 per cent more freight than they were handling at that time. In the week in which this estimate was made the number of cars loaded and moved was 555,396. In the entire month of May loadings averaged 593,000 cars weekly. In the week ended September 2 they had increased to 721,748—30 per cent more than in the week ended May 13 and 22 per cent more than they averaged weekly in May.

In an editorial in its issue of September 2 the *Railway Age* recalled that the increase in traffic from 1914 to 1918 during the Great War was 40 per cent. This much of an increase in the loadings of the week ended September 2, 1939, would have made them 1,010,000 carloads, which an ordinary seasonal increase would have raised in October to a peak of 1,056,000 cars. Therefore, this paper estimated that *if the increase in traffic during this war was relatively as great as during the last one,* the railroads would require an additional 2,400 locomotives and 300,000 freight cars in order to handle it.

Subsequently, there occurred a sudden and unprecedented increase of traffic. In the week ended October 21 the railroads loaded and moved 861,198 cars—45 per cent more than the average weekly in May and 55 per cent more than in the week ended May 13. This more than vindicated the estimate made on behalf of the railways last May. But it also left weekly loadings still almost 200,000 below the peak of 1,056,000 to handle which the *Railway Age,* in its editorial of September 2, estimated would require 2,400 additional locomotives and 300,000 additional freight cars.

Must We Have More Waterways?

Meantime, those who, for their own purposes, always have some reason to offer for increased government interference in transportation, have been emphasizing prospective railroad "lack of capacity" as an argument for it. This argument was used, for example, by Major General Julian L. Schley, chief of engineers of the army, and therefore in charge of government expenditures on waterways, in an address on October 16, 1939, before the Mississippi Valley Association. He quoted from the editorial in the *Railway Age* of September 2. He also quoted from an article by Col. C. D. Young, vice-president of the Pennsylvania, which was published last January, in which Col. Young said that the number of freight cars and locomotives then owned by the railroads "would be so far short of that necessary to handle the 1929 ton-mileage as to create transportation congestion of major proportion affecting the entire country."

General Schley then added, "It appears, therefore,

that the railroad equipment today is at least in no better condition than it was twenty-five years ago, and our waterways will have an important role to play in reinforcing the national transportation system in any emergency. . . . But there is a serious question whether our carrier facilities are yet ready for a war load. Have water carriers sufficient and adequate equipment to meet their probable loads? Are proper terminal facilities available? If preparedness in these fields is incomplete, is this not the time for federal legislation encouraging the work while a construction program and the manufacture of equipment can be accomplished economically and without interference?"

General Schley's statements unquestionably mean that the government should make large additional expenditures on inland waterways. They can be interpreted also to mean that the government should adopt policies that would help the railways to increase their equipment. There is not a single valid argument that can be presented in support of largely increased expenditures on inland waterways for purposes of either peace or war. As to legislation helpful to the railroads, it has been constantly advocated for years by those familiar with the transportation situation; and General Schley will be welcomed as a supporter of it if what he said means that he is one.

But additional expenditures on inland waterways are not only not needed to provide the country with adequate means of transportation, but would hinder, as they have in the past, the adequate equipment and maintenance of the railroads. For how can anybody make even a rational guess regarding how much more equipment the railroads are likely to need if there is to continue to be not only *uncertainty* as to the total amount of traffic there will be to handle, but also *certainty* that there will be further increases in government-subsidized competition with the railroads? The increased expenditures on waterways advocated by General Schley would be one of the best means of discouraging the increased acquisition of railroad equipment which he also apparently advocates.

A Great Railroad Achievement

The handling by the railroads of the recent increase in their freight traffic without any considerable car shortages has been a great achievement—how great can be appreciated only by considering (1) the decline that has occurred in the amount of their equipment, (2) the size of the increase in traffic that occurred, and (3) the suddenness with which it occurred. On September 1, 1939, they had in serviceable condition 27 per cent, or 7,199, fewer freight locomotives, and 23 per cent, or 469,148 fewer freight cars, than on September 1, 1930. The increase in loadings between the week ended August 26 and the week ended October 21 was from 688,591 to 861,198 cars, or 25 per cent. This was a period of only eight weeks; and the increase in traffic was the largest that ever occurred in any equal time. It resulted in the week ended October 21 in the handling of only 7½ per cent fewer loads than in the corresponding week of 1930—although, as already shown, there was about 25 per cent less serviceable freight equipment available.

Why were the railways able to handle this sudden large increase of traffic with such a greatly curtailed supply of equipment? First, because they have ample road and yard capacity—a capacity which as long ago as October, 1926, proved equal to peak loadings 40 per cent larger than those of the week ended October 21, 1939. Second, because of improvements since 1926 in both plant and operating methods. There is, however, no disputing that the great decline in the supply of equipment during the last decade has left the railways with too few good locomotives and cars to handle a much larger traffic than the present one. Whose fault is this?

What should be done to remedy the situation and assure that, whether in peace or war, there will be enough equipment available?

The Government and the Railroads

If there proves to be insufficient equipment, the responsibility will rest on the government itself, and especially on the Roosevelt administration. The amount of buying of equipment and materials that the railroads can do is determined by their net earnings—a fact repeatedly and conclusively demonstrated in these columns. But locomotives and cars wear out and must be retired like any other kind of machinery, whether they can be replaced or not. The net earnings of the railways rapidly declined from 1,252 million dollars in 1929 to 326 million in 1932 and recovered to only 474 million in 1933. In consequence, between the end of 1929 and the end of 1933 the number of locomotives retired exceeded the number acquired by almost 7,000, and the number of freight cars retired exceeded the number acquired by more than 200,000. Only a large increase of net earnings could have stopped this decline in the supply of equipment. But since 1933 the government has done many things to prevent and almost nothing to help cause the necessary increase of net earnings. It has forced increases in wages, prices and taxes on the railways in disregard of their constant protests; it has refused them advances in rates that they have sought; it has increased its expenditures on waterways and highways in aid of competition with them; and it has passed almost none of the legislation for equalizing their competition with other carriers that they have asked. In consequence, their net earnings since 1933 have averaged only 519 million dollars annually—53 per cent less than in 1923-1929—and in 1938 were only 373 million.

This is why, and the only reason why their supply of equipment has continued steadily to decline, and why what they have had left has continued steadily to grow older. They are now trying strenuously to in-

crease it. Will an administration that for over six years has followed unsound economic policies that have undermined the producing and earning capacity of the railroads and every other important industry now reverse those policies enough to enable the railways adequately to increase their buying—or will it continue to follow the same unsound policies, and then, continue, as heretofore, to damn the industries that show they cannot stand its policies for not contributing to recovery and preparing themselves for its perennial "emergencies"?

The Government and the Army

According to some of its very highest authorities, the government has not been performing so very well some extremely important tasks that are peculiarly its own. Soon after Gen. Schley, chief of engineers of the army, made his speech about transportation, some still higher officers of the army had some things to say about the army itself. In an address in Baltimore on October 27 Lieutenant General H. A. Drum of the United States Army declared that "recent maneuvers revealed our forces to be lacking in almost every essential excepting energy, aggressiveness and intelligence. We are not ready for a war," he continued. "We are not even ready for defense." The chief of staff of the army, Gen. George C. Marshall, also said that "with the exception of a few soldiers who participated in the World War we have few seasoned fighters in our army. Because of a lack of funds we have been forced to throw passes in a chicken coop."

It is solely the government's business to make and keep the army and navy prepared for any eventuality; but, according to Generals Marshall and Drum, in spite of all the unprecedentedly vast expenditures that have been made and deficits that have been incurred by our federal government during the depression, it has left our army in a condition wholly unfit for national defense, and must now enormously increase its army expenditures. With what consistency, then, do other high officers of the government raise questions regarding the condition of the railroads, and intimate that the government may have to take them over to assure efficient and adequate transportation service? How good a manager of the railways is a government likely to be which has shown utter inefficiency in performing one of the very primary functions of a government, that of managing its army? The record of government operation of the railways in 1918 and 1919 help afford an answer to that.

With More Equipment Railroads Can Handle A Further 50 Per Cent Increase

The railroads evidently are in a much better condition for national defense than the army. They need to buy much more than additional equipment to put all their facilities in good condition; but, in spite of the prolonged under-maintenance of their other facilities, they undoubtedly could, with only a sufficient addition to their equipment, handle a peak load of freight business exceeding by 50 per cent the peak load of 1939. Will the government, then, help afford them opportunity to make the needed increase in their buying, especially of equipment? In other words, if traffic continues to increase will the government help them to increase their buying power—i.e., their net earnings—by ceasing to force on them unwarranted increases in their operating expenses and taxes, and by adopting legislation necessary to the elimination of government discriminations in favor of their competitors? If the government would do these things the railroads would soon order, and afford manufacturers the opportunity to build, all the equipment that would be required for handling any increase of traffic of which there seems to be any prospect at present, whether in peace or war. And if private railway management were afforded the opportunity it would utilize the available facilities, whether in peace or war, with much more efficiency than government management.

How Government Should Help the Railways

Unfortunately, almost all men like to increase their own power quite regardless of their ability to use it efficiently. This seems to be even more true of government officials than of men in private life; and there are only too many in public life in this country as well as in Europe who kid themselves, or at least try to kid themselves, into believing that all they want with more power is to use it to promote the public welfare, whereas in fact all they want it for is to increase their own feeling of importance and advance their self-interest. The American people had one very costly experience with government operation of railways only about twenty years ago. It will act wisely if, remembering that experience, it imperatively demands that its representatives and officials in Washington who are so hungry for omnipotence shall afford private management of the railways opportunity to make all needed increases in their service and enlargements in their capacity, and shall otherwise let the railways alone.

If the present administration should be allowed to adopt government operation to meet an "emergency" it almost certainly would try to make it permanent. Already it has been allowed to adopt too many pretendedly "emergency" policies which it has subsequently contended must, in the "public interest," be perpetuated. If the railroads are unprepared for every possible emergency, the army, according to Generals Marshall and Drum, is much more unprepared—and the unpreparedness of both is due to the same government. The fact that this government has used so badly within recent years the greatest powers—both of spending and otherwise—ever conferred in time of peace in the history of the country is surely no evidence that it would use efficiently and in the public interest much greater powers in future.

What Will the Traffic Bear?—38

Cost-finding has got a bad name because some of its enthusiasts have claimed too much for it—like the fate of the cause of temperance in the hands of the prohibitionists. But the fact that extremists have claimed too much doesn't signify that the device is of no value.

On the contrary, a reasonable and limited use of cost analysis can demonstrably strengthen the railroads' competitive position—by leading the regulators to permit the railroads to compete for traffic

THE APPLICANT ISN'T AFTER THE GENERAL MANAGERS JOB—BUT HE CAN QUALIFY as a TROUBLE-SHOOTER

they are not now getting and requiring their competitors to withdraw from much traffic they are now serving.

So, even from the standpoint of expediency, a limited use of cost analysis by the railroads is called for. But, beyond mere expediency, is the fact that every other large industry uses cost analysis to perfect its pricing methods—to move it out of the red and steer it into the realm of profit. Joint costs are no monopoly of the railroads—cost allocation is just as difficult in the chemical industry as on the railroads, and yet the chemical industry uses such analysis to its profit.

Some object that no two railroad operations are exactly alike, hence that costs cannot be used in universal application. But that is no real objection, because neither are the costs in two packing plants alike, but they give useful *average* experience anyhow for pricing a given service, so that *average* prices will exceed *average* expenses. When unusual conditions are found, unusual exceptions can be made.

Cost finding can, of course, be extended to ridiculous extremes on the railroad or any other industry. For example, on a railroad, there is a wide variance between costs on branch lines and on main lines, as well as between the costs of parallel railroads, or even two adjoining divisions of the same railroad. Sensible cost analysis does not ignore these differences but takes them all into account, endeavoring to get *average* figures in a given area which will determine for that area whether the railroads can profitably meet the costs of their common competitor—the motor carrier (whose costs, incidentally, do not vary as widely as railroad costs).

The objection is also made that the component parts of railroad and truck costs are so unlike that they afford no proper comparative basis for determining the extent to which each agency should participate in a given traffic. But the direct and administrative expenses of the two agencies are comparable. It is also sound business to include some profit ratio of operating expense as a part of costs.

A fair average of unit costs of railroad handling, based upon average conditions, will disclose that the railroads can make profitable rates which will compete with pick-and-choose common and contract trucks, water carriers and privately-operated trucks (which latter seldom have the opportunity for return loadings). If motor carriers for hire (with their opportunity for return loadings) are so inefficiently managed that their costs will not permit them to compete with privately-operated equipment on such a basis, they can scarcely succeed in demonstrating that the public interest justifies a higher rate basis on their account.

An exhaustive study of truck and rail average unit costs shows that the prescription of minimum rates based upon relative costs would declare the trucks out of a large part of the business they are now handling, and return it to the railroads on a profitable basis. That is the real issue at argument here. The traffic is not now moving by rail and we state how, in our opinion, it can be brought back to rail movement. If the railroads didn't want the business, that would be different. But they do want it, so we'd be glad to see someone demonstrate either that the method we advocate will not succeed, or that some other method would succeed more fully.

Our columns are open to serious discussion of this question, with strict anonymity for those who desire such protection. We are not, in this series of articles, trying to prove a point or win an argument. We are trying to help put traffic back on the rails, wherever superior economy entitles the railroads to the business. If anyone has any better suggestions to this end than those given here, we should like to publish them.

Railway Passenger Cars for High-Speed Service

Abstract of a paper presented at a meeting of the Society of Automotive Engineers, held October 6, at the Blackstone Hotel, Chicago

By Peter Parke

Chief Engineer, Pullman Company, Chicago

MANY words have been spoken in meetings, and much has been published, about the progress in passenger-car construction within the period 1933 to date, a period which gave rise and development to lightweight streamline railroad passenger-car equipment, marking a new era in car construction.

Why the Old Heavy-Weight Cars?

What prompted the development of lightweight cars for high-speed service? The answer is that our railways' outstanding position in the passenger transportation field was challenged by the progressive activities of the interest which you gentlemen represent. We have provided high-speed, attractive and luxurious rail transportation to meet your challenge.

To illustrate what has been done in the way of economic operation with lightweight, high-speed equipment: One of our principal railroads, operating a Diesel power unit, with difficulty maintained the first long distance high-speed train schedule, hauling seven heavyweight, conventional cars. The same power unit easily makes the schedule with 10 modern lightweight cars. The operating economy is obvious.

You may ask, "Why the older heavyweight equipment?" The answer to that is that the conventional railway passenger cars over a long period of time gradually increased in weight on account of an ever-growing public demand for stronger and "safer" cars. We had to give up wood cars on account of fire hazard and go to all steel cars, which were built with some metal allowance for deterioration from corrosion, which later proved to be not a serious matter as the steel was usually kept well protected with paint.

The steel cars also were gradually increased in weight by frequent demands for increased safety and improvements added for passengers' comfort. In the earlier days of car building no commercial high-strength materials were available to work with. We do not begrudge the increase in weight wherever it contributes to safety, for we pride ourselves on our safety accomplishments, but we often wonder what would happen to automobiles, buses and airplanes if damage or destruction in collisions or crashes caused a demand for an ever-growing increase in strength. Safety in car construction, which we endeavor to attain, is after all, only relative. No practical vehicle construction is *safe* in a collision at say 90 m.p.h., nor at 60. This is obvious when we consider the enormous striking energy of fast moving trains. At 90 m.p.h., the striking velocity of a train is equal to that attained by a free falling body from a height of 270 ft. and at 60 m.p.h. from a height of 121 ft. It is not difficult to picture the lack of absolute safety in a vehicle struck by a 500-ton weight falling from either of these heights.

Lightweight History

Before describing our modern cars, let us for a moment take a brief look backwards.

Pullman Company's first pioneering effort in lightweight cars for main line service, exhibited at The Century of Progress Exposition in 1933, was the lightweight all-aluminum-alloy observation car "George M. Pullman." The Pullman-Standard Car Manufacturing Company's all-aluminum day coach was exhibited at the same time. The Milwaukee also exhibited a lightweight steel coach.

In March, 1933, the German State Railway introduced into service between Berlin and Hamburg, the two-car articulated, fully streamlined double-ended "Flying Hamburger," which operates over the 179.2 miles between these two points at an average speed of about 75 to 78 m.p.h. This twin-unit is the forerunner of our modern streamlined cars.

The railroads of this country, thoroughly alive to the needs of the times, however, were simultaneously working on the development of lightweight high-speed streamlined equipment. In the second year of The Century of Progress exposition in Chicago, there were exhibited this country's first modern lightweight streamlined train, built by Pullman-Standard Car Manufacturing Company for the Union Pacific, completed February 6, 1934, and later in the same year a stainless-steel train for the Chicago, Burlington & Quincy, built by the Budd Manufacturing Company.

These early trains were designed as short day trains, for coach passengers only, and therefore with the minimum non-revenue space and intended to provide rapid, attractive, and cheap transportation. They were built to what was deemed the smallest practicable cross-sectional area, were given the maximum streamline effect; made light in weight to hold down power requirement to a minimum, and yet built without sacrifice of strength as compared with conventional equipment. The service of these trains has proved that the public responds with increased patronage to rapid service and attractive equipment.

Immediately these trains were produced, and before they were placed in service, a demand arose for high-speed, lightweight streamlined cars for our highest class trains, with the maximum practicable provision for luxurious non-revenue space for lounging and other con-

veniences for passengers' comfort. To avoid any semblance of crowding, roomier cars were demanded. The result is that today we build our luxuriously equipped lightweight cars *wider* and *longer* than our older conventional steel cars, and yet the weight is about 30 per cent less.

Car Types and Materials

To construct railway cars of approximately 70 per cent the weight of former conventional steel cars without sacrifice of strength was made possible by the development of new materials of construction, which in turn prompted the development of new designs and manufacturing methods.

When the first lightweight train was designed, only two metals suitable for lightweight car construction were available: aluminum alloy, which our company pioneered, and stainless steel, pioneered by Budd. Both are excellent materials of great strength, but high in cost. When later developments made available a low-cost, high-tensile, low-chromium-alloy, rust-resisting steel, our company was quick to take advantage of the new product, and developed designs suitable for it.

As a result of developments to date, there are being built today four general types of lightweight car structures: (1) The all-aluminum-alloy car of riveted girder-type side construction, lighter by several thousand pounds than any other type, but more costly; (2) the stainless-steel car of truss-frame construction, with so-called shot-welded connections, in which the outside sheets are not strength members, but function as covers only. Being made of light gage steel, they are corrugated for stiffness; (3) high-tensile rust-resisting-steel truss-frame cars of all-welded construction, with sides covered with light-gage corrugated stainless steel. These cars weigh approximately the same as all-stainless-steel cars of equivalent strength; (4) welded-girder car constructed throughout of high-tensile, rust-resisting steel. A car of this type will weigh only a trifle more than the truss-type car, but will cost less. Welding of lightweight steel structures is more desirable and economical than riveting, as rivets are required in an unduly large number in thin sheets for adequate bearing. Welding saves weight by eliminating gaps and flanges for riveting.

The original short streamliners were fully articulated, which not only effected a maximum weight reduction by requiring only one truck per car and no draft gear attachments, platforms, etc., but greatly contributed toward smooth riding on curves at high speed. Full articulation has this disadvantage—it is not a simple matter to cut out one articulated car and substitute another.

The next car type developed for longer trains was articulated in pairs, which effects some weight saving, requiring only three trucks and two draft gears for two cars. The present trend is definitely back to non-articulated cars, for maximum flexibility in train makeup and ease of cutting out of, or adding cars to, a train at connection points.

Streamlining of cars for long high-speed trains has some practical value, but its outstanding merit, aside from power and streamlining, is its great appeal to the aesthetic sense of the public. You are aware of the fact in your own business that good "lines" sell cars.

In the first streamline cars, efforts were made to go the limit in streamlining. Cars were built with smooth complete bottom enclosure to cover underneath equipment. Cars had inwardly sloping sides, smooth enclosure between cars, air flow shaped ends on the rear cars in the train, covering for truck sides, etc. Smooth enclosure for underneath equipment in high-speed trains has practical value in reducing the scouring effect on equipment from ballast, but the generally prevailing practice today is to omit bottom enclosure and substitute inwardly curved side skirts. This practice is dictated by a desire for easy accessibility to equipment, a requisite to expeditious maintenance. Complete enclosures between cars provide a smooth and attractive appearance of a train as a whole, but some railroads do not employ an outer covering, simply adhere to the conventional vestibule diaphragm. All cars are now built with vertical sides, so as to give the added space to the car interior. Observation ends are built to various modifications of true streamline shape.

The high-tensile aluminum-alloy usually employed (No. 17ST) has an ultimate tensile strength of 55,000 to 63,000 lb. per sq. in., a yield point of 30,000 lb. to 40,000 lb., and an elongation in 2 in. of 18 to 25 per cent.

High-tensile low-chromium rust-resisting steel has an ultimate tensile strength of 65,000 to 75,000 lb., a yield point of 50,000 to 60,000 lb. and an elongation for sheets and strips of 22 to 27 per cent; for rolled shapes the elongation in 8 in. is 1,500,000 divided by the tensile strength.

Stainless steel derives high-tensile properties from severe cold rolling; it is rolled ¼, ½, ¾ and full hard. Annealed it runs 80,000 to 95,000 lb. in tension; cold rolled ¼ hard, 125,000 lb.; yield point annealed, 35,000 to 45,000 lb.; yield point ¼ hard, 110,000 lb.; elongation in 2 in. for ¼ hard, about 25 per cent.

Construction Details and Materials

A few words about some construction details and materials employed in the various types of cars.

In aluminum cars the structure is riveted. We use cold-driven Huck rivets for all rivets $\frac{5}{16}$ in. or less in diameter; for larger size rivets hot-driven steel. The Huck rivet is an exceptionally ingenious device which, if you are not familiar with it, is worth your while to look into.

As aluminum has a modulus of elasticity only one-third that of steel, the deflection factor must be given careful consideration in design. It is in this connection that extruded sections, cheaply produced in aluminum, can be and are employed to great advantage. Extrusions permit advantageous distribution of metal. For certain framing members, such as draft sill and underframe cross members, high-tensile steels are advantageously employed in combination with the structural aluminum.

The truss-frame cars give the car builder an opportunity to try his skill as a bridge truss designer, since each member in the truss must be as carefully proportioned to the stress requirement as a member in a bridge truss. This type of design for Pullman cars having varying window spacing not only for each plan, but also for each side, adds considerable work for our engineers. The construction of both truss frame and welded girder-type cars involves many interesting new and novel developments in welding and fabrication.

It must not be inferred from the foregoing that the difference between the new lightweight cars and the old conventional cars is confined solely to the use of new structural metals. Practically all materials entering into the lightweight car construction are new. Running gear must be suitable for high-speed service, hence wheels and axles must be different in chemistry and treatment. Couplers are much heavier and of the tight-lock type, for reduction of slack between cars and to act as an anti-telescoping device. Draft gears are of improved design for smooth train operation. Floors, insulation, partitions,

windows—all these are different. Even the paints and fabrics are different; light in color instead of the former drab colors, which were provided to "stand dirt but not show it." We use cork or equivalent flooring, lightweight fire-resistant insulation, plymetal or built-up aluminum for partitions and doors, Presdwood or equivalent for side finish and ceilings, and sealed double glazed windows with dehydrating means between the glass, the inside light safety glass. There is nothing of the *old* in our new lightweight cars. The interior designs, trimmings, lights—all are new.

Pullman Truck Developments

Trucks for lightweight cars (except at articulations) are of the four-wheel type. As a type, such trucks are not new; they have been used under conventional equipment wherever journal loads have permitted the use of four standard axles per car. Almost any type of truck will ride well on good track and at slow speeds. High-speed operation over what may be considered only fair track and having curves demanded truck improvements for good riding qualities and such needed improvements offered a wide field for experimentation. Much has been done on trucks by our people and others, but there is room for still further improvements.

I shall here briefly dwell on our own developments only. We built inboard-bearing trucks for the original streamliner for the sake of reducing truck weight, but abandoned this type because of the poor accessibility for inspection of bearings and boxes and the objection to pressing off wheels in bearing exchanges.

Conventional types of four-wheel equalizer trucks with better than usual spring flexibility have been provided, and while these gave fair riding qualities, we felt that they were not the answer.

Triple-bolster wing-box type trucks were developed which give very fine riding qualities, but require close maintenance. Four-wheel double-bolster equalizer trucks (similar to the conventional six-wheel truck with center axle and wheels omitted), did not show enough improvement over the conventional four-wheel truck to justify further consideration.

Our next step was a change in this double-bolster truck. We omitted equalizers and substituted wing boxes and applied helical instead of full elliptic springs under the bolster. This type of truck so changed, with a one-way shock absorber at the bolster springs, gave fine riding qualities, but the change was only a prelude to our latest and best truck to date. This is a modified conventional four-wheel equalizer type of truck, with helical bolster springs, one-way snubbers, and bolster stay rods in place of chafing plates. Helical bolster springs have the same amount of flexibility as formerly employed for full elliptic springs. The shock absorbers check rebound and break up harmonic spring vibrations. With this truck, some means to reduce lateral sway is desirable for observation or tail-end cars. The observation end is usually light and has nothing to steady it; the front of the car held by the pull on the couplers and the friction between vestibule diaphragm face plates gives no trouble.

Wing-box type journal boxes for trucks were designed on the perfectly sound theory that so far as vertical shocks are concerned, a truck should have a minimum unsprung weight. With wing boxes the unsprung weight of heavy equalizers is eliminated. Lack of space for springs of adequate flexibility *over* the journal boxes, which would be the desired place to take the rail shocks, necessitated going to one spring on each side of the box; hence wing boxes. While this arrangement gives soft vertical riding qualities to a truck, unfortunately, the farther the spring which supports the truck frame is away from the truck center, the greater the tendency for the truck to teeter. Teetering of low amplitude at low train speed is negligible and of no importance, but it is objectionable for a 1-in. movement below and above normal. As wear occurs between the pedestal guides, and the clearances increase, teetering at rough spots in a track produces an objectionable pounding by knocking the wheels back and forth. This we have overcome with the application of flexible pedestal liners having rubber in shear.

For all trucks for high-speed service, it is the common practice to employ roller bearings, and, as a safety measure, to make axles and wheels of special chemistry and treatment. With roller bearings we avoid the hot-box troubles, all too frequently encountered in severe winter weather with the conventional plain babbitt-lined bearings. For high-speed trucks the brake cylinders and brake rigging are mounted on the trucks, which makes a compact arrangement and eliminates the long body brake rods employed in conventional cars.

For good riding qualities, adequate flexibilities of the spring system are of utmost importance. We usually provide 3¾ in. to 4 in. flexibility for equalizer springs and from 6¾ in. to 7 in. for bolster springs, and make all springs with the same amount of flexibility, regardless of capacity, modified only to this extent, that each spring is given a close-range capacity rating, above and below the nominal. There is no one problem in car construction more interesting to work on than to attempt the production of an ideal truck.

High-Speed Passenger-Train Brakes

For safe operation of a railroad train it is as important to know how to stop as to start it. Braking cars from a speed of from 70 to 80 m. p. h. is an every-day occurence, but braking from 100 m. p. h., and over, introduced definitely new problems. The lightweight car has an advantage over the conventional in that it generates less heat, into which all the kinetic energy in a moving car is transformed during a brake application. When we consider that the kinetic energy increases as the square of the velocity and that therefore the braking from 100 m. p. h. is nearly twice as severe as from 75, the importance of the high-speed braking problem is apparent.

A train is stopped by the retarding force set up between wheel and rail by action of the brakes. The magnitude of the retarding force is dependent upon rail adhesion, which in all likelihood is constant at all appreciable speeds, but varies according to the material and condition of rails. If adhesion is low, the retarding force must be low to prevent sliding of wheels. On dry rails the co-efficient of adhesion is approximately 20 to 25 per cent; on wet rails it may be as low as 15 per cent. The retarding force of the brake shoe varies continually during a stop. After a few seconds of brake application, it changes due to the increased heat. It decreases as the shoe pressure increases. Consequently, to produce the same frictional force, the braking ratio must be increased with the shoe pressure. Chicago, Burlington & Quincy recent tests show that a braking ratio of 127 per cent with 4,730 lb. shoe pressure was as effective as 152 per cent with 18,850 lb. pressure.

Pennsylvania brake tests of 1913 established several basic brake facts; briefly they are as follows: (a) The co-efficient of brake friction of brake shoes varies through a wide range; (b) when shoes are hard, the co-efficient of friction is low throughout the braking range (8 per cent at 150 per cent and 10 per cent at 50 per cent

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Short Lines Meet in Kansas City

Member lines ratify legislative program, but table proposed change of name

THE 26th annual convention of the American Short Line Railroad Association, was held in the Hotel Continental at Kansas City, Mo., on October 23-24, with 110 railway officers, representing 97 member lines, in attendance. One of the important announcements made at the convention was that the Denver & Rio Grande Western and the Minneapolis & St. Louis had become members of the association. Each of these railways has a larger mileage than any lines hitherto included in the membership, but it was pointed out that several of their policies, aims and objectives coincide with those of the short lines, which entitles them to membership under the terms of the constitution of the association.

The board of directors recommended a change in the name of the association from the American Short Line Railroad Association to the National Railway Association, stating that since the term "short line" had acquired the unfortunate and mistaken meaning of "parasite" in certain circles. This proposal caused protracted debate and it was finally decided to table the recommendation of the board until the 1940 annual convention.

The plight of the short lines in the event that the government should take over the railways if a war developed involving the United States was discussed in detail. It appears that several of the short lines feel that they were given extremely shabby treatment during the last period of federal control and after the railways had been returned to their owners. In view of the expectation that the railways will be taken over by the government in the event of war, the officers of the association were instructed, in such event, to do everything in their power to secure representation for the short lines on any government body that might be formed to direct the railways in wartime. A committee of ten, two from each region, was appointed to consider the matter and report to the executive committee on ways whereby the short lines might be protected if federal control became an actuality.

President's Report

President J. M. Hood, in presenting his annual report, stated that the association now comprises 312 member lines, operating 14,682 miles of first main track, the largest mileage in recent years. These railways earn more than 100 million dollars annually, employ 34,352 persons, who are paid $55,000,000 a year in salaries, or an average remuneration of $1,612 annually.

Mr. Hood continued: "A considerable part of the value of a membership in the association is due to the assistance which officers may render to individual lines in connection with specific problems. Sometimes that assistance is made possible by the location of the association's headquarters at the nation's capital; sometimes by reason of the officers having access to solutions of similar problems arising in connection with certain carriers; and, at other times it is by reason of the past experience of the officers.

"Occasionally representatives of member lines inquire as to the cost of such particular services. It should be understood that under no circumstances does the association or any of its officers render a bill for any service; the association's sole source of income being the standard dues and assessments. To the extent that it is possible, the officers will render services to individual lines, being limited only to their duties to the members as a whole and, on occasion, by their inability to act due to a conflict of interests.

"Owing to the fact that a considerable number of member lines are not subscribers to the per diem rules agreement, during the past year a separate form of agreement was distributed whereby members desiring to do so could subscribe only to Rule 18, which has to do with the settlement for the use of non-shipper-owned private cars.

"It is believed that, by reason of the internal reorganization effected by the Interstate Commerce Commission, July 1, 1939, that body will expedite its proceedings and possibly improve results as well. It is quite certain that the change will not impair its usefulness. Your officers keep themselves informed of commission procedure and are always ready to assist member lines in connection with any problems which require commission proceedings.

R. F. C. Loans and Social Insurance

"Some member lines are indebted to the Reconstruction Finance Corporation and others may desire to apply for loans. Advice and assistance will be given to either class of members upon request. The Railroad Credit Corporation is liquidating its affairs and to date has returned 78 per cent of the contributions made to it by common carriers through the marshalling and distributing plan. It is expected that 3 to 5 per cent additional distribution will be made during the current calendar year. It is also anticipated that total distribution of between 90 and 95 per cent will have been made at the time of final liquidation.

"Since July 1, 1939, interstate common carriers by rail and their employees have been subject to the railroad unemployment compensation act and are no longer under the social security act. As soon as sufficient experience under this act has accumulated to warrant doing so, the general counsel will print and distribute an analysis of the act and rulings thereon. During the past year negotiations were had with the railroad retirement board and representatives of common carriers and of the employees, which resulted in a recommendation to member lines that they execute a contract with the railroad retirement board to assist in the administration of the unemployment compensation act. It is too early to say definitely that this experience has been satisfactory, but it is believed that it will be found so. To the extent desired by member lines, the officers of the association will assist them in connection with proceedings before the National Mediation Board or the National Railway Adjustment Board.

"Employees engaged in interstate commerce on mem-

ber lines are subject to the wage provisions of the fair labor standards act. This provides that there shall be paid prior to October 24, 1939, a minimum of 25 cents for each hour worked. Commencing October 24, 1939, the minimum is 30 cents per hour. Such employees are not subject to the maximum hours requirements of the act. The administrator of the act has invited the association to nominate a representative of short line railroads to the railroad industry committee. Such nomination has been made and it is expected that the committee will consist of four representatives of employers, four of labor, and four of the general public. The first meeting will likely take place in the fall of 1939 and, in order that your representative may function properly, it is probable that certain information will be requested.

"Protection to member lines against excessive losses through accidents and injuries is available through an arrangement effected by the association. Details and application forms have been furnished member lines. Under various acts of Congress federal aid is available under specified conditions for protecting and separating highway-railway grade crossings. Detailed information has been furnished representatives of member lines and individual assistance is available upon request. Sporadic attempts to cancel rates and routes in effect via our member lines continue. Each of these is resisted to the extent possible wherever it is in the public interest to retain the route and rate.

"Legislative-wise, the year just closed has produced but few acts of direct benefit to member lines. A general transportation bill has been passed by both houses of Congress, but in different forms, and conferees are scheduled to meet and reconcile the differences during December, 1939. It is hoped that a beneficial act will result early in 1940. By far the most important results to member lines of the meeting of the first session of the 76th Congress were negative in form. Many proposals which would have been detrimental to member lines were either abandoned or laid aside.

"The opportunities to protect the interests of member lines and to render individual service on the part of the officers of your association are innumerable and constantly present. The officers are making vigorous efforts to administer the affairs of the association in accord with the wishes of the membership and the directions of the board. The most will be accomplished when the membership unhesitatingly makes its wants known, both during meetings of the membership and, in the interim, directly to the officers."

Legislative Report

C. A. Miller, general counsel for the association, delivered a comprehensive report, abstracted below:

"The association's legislative influence is measured by the activities and influence of representatives of its member roads. The membership of the association as a whole, during the past year, gave the officers much more effective support than during the preceding several years. Many members, however, did not actively participate in the legislative endeavors of the association, with the result that the association could not exercise its maximum legislative strength during the past session of Congress. The officers sincerely hope that the legislative efforts of the members will show improvement during the coming year, and that those efforts may be crowned with success, for the undertakings to which the association is committed.

"The legislative program of the association was, with certain exceptions, formulated by the members at the last annual meeting. At that meeting the membership referred a number of subjects to the traffic committee and the legislative committee for special consideration. The traffic committee made recommendations with respect to certain legislative proposals, which were approved by the legislative committee, and by the board of directors. The association's legislative program as finally formulated was printed in pamphlet form on March 1, 1939, and received wide distribution. The legislative committee of the association is composed of representatives of member lines in each state in which the association has members, and consequently covers 46 States. That committee held two formal meetings in Washington, and many of its members rendered special services in the furtherance of the association's legislative program.

"The first session of the 76th Congress convened on January 3, 1939, and adjourned on August 5, 1939. Unless an extra session is called prior to the convening of the regularly scheduled second session of the 76th Congress on January 3, 1940, there will be no further legislative action until that time. All bills introduced during the first session of the 76th Congress retain their status in the next session. Consequently, the progress that was made during the first session will be available during the coming session. During the first session there were 10,515 bills and resolutions introduced. Of this number the association catalogued and followed 320. Of that number only 170 were of such interest to the members of the association that they need be specifically referred to in this report."

The general counsel then outlined the specific progress made on the legislative program of the association, which covered some 20 subjects. He also listed the laws enacted of interest to short lines, quoting the salient features of more than 100 bills on 56 separate subjects.

Reports were also rendered by the two regional traffic managers, J. P. Blanton and J. H. Jester, dealing with the many rate cases handled during the year and giving the results of such handling in detail.

Committee Reports

The report of the operating committee is given in full below:

"You have been advised of the progress from time to time of the negotiations with the representatives of the long and short line railroads, the brotherhoods and Director W. J. Patterson, of the Commission's bureau of safety, with respect to the rules, standards and instructions for the installation, maintenance and repair of systems and devices and appliances intended to promote the safety of railroad operation in accordance with Section 26 of the Interstate Commerce Act, as amended August 26, 1937, known as the Railway Signal Act. Your committee has been pursuing this matter with the special committee of the Association of American Railroads and the final draft of the rules, standards and instructions was discussed with Director Patterson on several occasions and finally accepted by the special committee on April 7, 1939. On April 13, 1939, the Commission issued its order, effective September 1, 1939, substantially as suggested by the committee, which rules and regulations were drafted along the lines of the present signal rules of the various trunk line railroads. A copy of the order of the Interstate Commerce Commission was sent to each member line of the association. The rules, standards and instructions, as finally adopted, were the minimum that the director would accept, and while many of the trunk lines believed they will be burdened with additional maintenance expenses and filing of re-

ports, most of the short lines should not be greatly affected by these rules and instructions."

Following is the report of the legislative committee:

"The legislative committee of the association is composed of members residing in 46 different states. It is difficult, therefore, to have formal meetings. However, the committee held two such meetings during the past year. Both of the meetings were held in Washington, one of them on February 11, 1939, and the other on June 5, 1939. At the meeting on February 11, 1939, the committee considered separately and approved each recommendation of the traffic committee. These recommendations were, in turn, approved by the Board of Directors of the Association. At the meeting on June 5, 1939, reports were received from the officers of the association with respect to various bills pending in the Congress, and consideration was given to those bills which were of direct interest to the members of the association. The members of the committee have, in general, rendered valuable aid and assistance to the officers in furtherance of the association's legislative policies. A number of the members of the committee have gone to Washington from time to time during the year and discussed legislative matters with their respective senators and congressmen. The officers of the Association report their desire that the legislative committee be continued, and it is so recommended. It is hoped that the committee will continue to assist in the furtherance of the Association's legislative program. The committee, however, urges every member of the association to render all the assistance possible along this line."

New Rule of Rate-Making

The traffic committee reported as follows:

"A meeting of the traffic committee was held at Washington January 16, 1939. In addition to giving consideration to the pending Lea bill in Congress and other legislative recommendations, the committee took action on the subjects which had been referred to it by the membership as follows:

It approved the following proposal as a substitute for the rate-making rule of Section 15 (a) of the Interstate Commerce Act:

Should Section 15a be repealed and for it be substituted a rate-making rule, applicable to all modes of transportation under the jurisdiction of the Interstate Commerce Commission, to the effect that it shall be the duty of the Commission to exercise its authority over rates, so far as is consistent with its duty to protect the public against the exaction of unreasonable and unjustly discriminatory rates, in such way as to permit the establishment by each such mode of transportation of rates which, as a whole, will be adequate, under honest, efficient and economical management; (a) to sustain a national transportation system sufficient at all times to meet the needs of commerce; (b) to establish and maintain credit so that capital essential to provide the needed facilities and service may be attracted to the transportation industry; and (c) to afford fair treatment to those having their money invested in the property held for and used in the service of transportation; with the understanding that the Commission should as at present be allowed reasonable latitude to modify or adjust any particular rates or groups of rates which it may find to be unreasonable or unjustly discriminatory and that this proposal would not limit the power of the Commission to prescribe maximum and minimum rates or to suspend new rates?

Decided to oppose any broadening of powers of the Interstate Commerce Commission over divisions.

Favored amendments to the Interstate Commerce Act to require proof of actual damage in all reparations proceedings; limit interest allowances thereon to four per cent and to provide a statute of limitation, applicable to all reparation claims, of two years.

Opposed Hastings postalization plan as impracticable and leading to immediate government ownership.

Caskie Talks

After the opening of the convention by President J. M. Hood, M. M. Caskie, past chairman, Interstate Commerce Commission, and a former member of the association, addressed the meeting. Mr. Caskie said that the short lines are confronted with most of the problems that the trunk lines must face, as well as several other problems that are peculiarly their own. He reviewed the history of the construction of short lines, beginning in 1809, and pointed out that most of our great railway systems were formed through the amalgamation of a number of short lines. He cited the New York Central; the Chicago, Burlington & Quincy; the Chicago & North Western and the Southern as being outstanding illustrations of such consolidations. Mr. Caskie said further that, between 1911 and 1933, 90 Class 2 roads were purchased, leased or otherwise acquired by the trunk lines, or an average of 7 railways or 400 miles of line each year. As indicating the short lines part in the creation of new industries and the development of the country, Mr. Caskie stated that originally most short lines served inaccessible and thinly populated territories which had been built up by the provision of transportation.

"There are bright spots in the future," Mr. Caskie said. "Abandonments because of exhaustion of natural resources may continue to be expected, but there has been no relative increase in such abandonments since 1929. Since 1936, the short lines as a whole have been in the black for the first time in several years and today are showing increased income, the recovery of such lines being considerably greater than that of the trunk lines.

Wheeler Sees Government Ownership in War

A luncheon meeting of the association was addressed by Senator Burton K. Wheeler, chairman of the senate committee on interstate commerce, who said:

"Our whole national economy is sensitive to the financial stability of railroads. There must be reorganization of railroads which at present are laboring under unsound or top-heavy financial structures. The lessons we have had in railroad financial reorganizations have been bitter, but they have been real.

"Our entire railroad history has been one of recurring cycles of insolvency, reorganization, further insolvency, reorganization and still further insolvency. The process has been one of fees for bankers and lawyers and then failures. The reorganizations have been makeshift affairs foisted on the investors, the public and the railroads at unpardonable cost and extravagance. Such makeshift reorganizations were doomed to fail as they have so frequently done.

"The future of the American railroads is not as black as many predict. Railroads and the service they render are irreplaceable. There are those who would have us believe that railroads, as the horse and buggy, are outmoded. Such is not the case, the railroads are as indispensable today as they ever were.

"You railroad men, if you have common ordinary horse sense, will realize what will happen to you if we get into another war. The first thing to be taken over will

be the railroads and if that happens, you'll never get them back again!"

The workings of the railroad retirement and the unemployment insurance provisions were explained by M. R. Reid, railroad representative on the Railroad Retirement Board, and by J. D. Robinson, director of the unemployment insurance division of the same board. In addition to describing the activities of the board along various lines, Mr. Robinson explained that since the unemployment insurance division began functioning, only 41 per cent of the estimated claims had been made. He stated that 108,442 claims had been filed, of which 88,362 had been paid, at an outlay of $2,609,000 or an average of $14.76 per claim per half-month period. He stated that his section of the board had set up 12 regional offices and 58 small district offices and employed 200 individuals at other points.

The legislative and traffic programs, as outlined by the general counsel and the traffic managers, were approved by the members, with certain legislative items being removed from the list as already settled. The association added only one new legislative item to its list, namely, it voted to oppose any federal workmen's compensation act that might be detrimental to the short lines.

Officers Re-Elected

J. M. Hood was re-elected president of the association: C. A. Miller, general counsel and J. P. Blanton and J. H. Jester were also re-elected traffic managers. The entire slate of regional vice-presidents was re-elected as follows: Eastern region: O. H. Nance, president, Maryland & Pennsylvania; Southern region: H. W. Purvis, receiver, Georgia & Florida; Western region: H. G. Monger, traffic manager, Milwaukee Electric; Southwestern region: H. B. Cobban, general manager, Northeast Oklahoma; Pacific region: W. L. White, vice-president, Yosemite Valley.

J. M. Huntt was elected secretary-treasurer to succeed R. E. Schindler, who retired on October 1.

Railway Passenger Cars for High-Speed Service

(*Continued from page 695*)

brake pressure); (c) the average co-efficient varies with speed (25 per cent at 40 m. p. h. is reduced to 9 per cent at 60 m. p. h.); (d) coefficient decreases with increased pressure (22 per cent at 50 per cent brake pressure, 16¾ per cent at 150 per cent brake pressure).

These variables, associated with higher train speeds than before and therefore involving new facts to be determined, emphasize our high-speed brake problems. Conventional cars are braked at 150 per cent for emergency. The latest development in brakes for high-speed trains is to brake cars at 250 per cent and to provide a retarding control which automatically reduces the brake cylinder pressure as the speed is reduced.

With this new brake, train stops from 100 m. p. h. can be made in 3,600 ft. With conventional brakes, it requires 6,000 to 7,000 ft. Longer than conventional brake shoes are provided on high-speed brakes for increased effectiveness at the greater braking powers.

Many roads still operate high-speed cars with conventional brakes, making longer stops.

Experiments are now being made with brakes, in which the brake shoes are taken off the wheel tread. Just how successful such brakes may prove is still to be determined. The greatest problem confronting designers is how to devise a satisfactory means for dissipating the great quantity of heat generated in retarding a train on long and steep grades.

It is difficult to find a cheaper and better means through which this heat can be dissipated than through the conventional type brake shoe, the car wheel and the rail. The car wheel seemingly can stand the higher braking pressures without appreciable distress.

[Mr. Parke here reviewed the principal features of ice-actuated, mechanical compression and steam-ejection systems of air-cooling now in general use, also the heating and lighting equipment developed to meet modern demands.—Editor.]

An outstanding feature of our new car lighting is the glareless and well diffused illumination. Architecturally attractive and in line with contemporary art there is an absence of the bracket and other types of highly ornamental fixtures. Diffusion lens fixtures which concentrate light where needed are extensively used.

Fluorescent lighting has lately come into the picture. It is new for railroad cars but a very promising development for obtaining increased illumination with low current consumption. Economy in current consumption is important since we are limited in the amount of power which can be taken from a car axle. With Propane gas or Diesel-engine-driven generators which have recently been introduced, the power is only limited by the available space for the equipment under a car.

* * *

Woodlock Pays His Respects to the Classification

In a recent decision by the I. C. C., "all-commodity rates" between New York and Boston were upheld, but Commissioner Alldredge dissented on the grounds that such rates did not conform to the niceties of the classification. On this dissent, Former-Commissioner Woodlock comments (in the Wall Street Journal) as follows:

"With the utmost respect to the Commissioner whose views have just been quoted, this writer must insist that those views of rate-making are completely incompatible with the present condition of transportation as an industry, in that in the light of that condition the rate proposed by the carrier is neither unjust nor unreasonable. It may not correspond with precedent in the matter of theoretical 'classification', but, as every one knows, theory in classification is one thing and practice quite another. Furthermore, even that theory was a mixture of principle. A commodity was 'classed' by taking into account its specific gravity (i. e., the weight space index), its fragility and its value. Thus were included the 'cost-of-carriage' factor and the 'worth of service' factor, the latter expressing the old rule of 'what the traffic should bear.'

"In the present instance the cost of service factor is satisfied; rate and load provide adequate compensation for carriage. As to 'worth of service' the fact that the rate is necessary to get the business settles the matter. The Commission is no longer dealing with a monopolistic industry but with one acutely competitive, most of all for traffic of this sort. Today there are only two questions necessary to ask about a rate: Will it pay the carrier some profit? Does it cause discrimination or undue prejudice? If it satisfies both questions, it is a proper and a just rate from an economic point of view.

"As to the law on the point, this writer will not express opinion, for he is not a member of the bar. He will be satisfied to rest on the view of the two majority members of the division who are. But he has no doubt whatever as to the economic view, and its relation to the public interest. It is time that we recognize the fundamental change in the transportation industry's character."

Taxes Hound Jersey Central into Section 77

THE 710-mile Central of New Jersey, on the last day of October, filed a petition for voluntary reorganization under Section 77 of the federal bankruptcy act in the United States district court at Newark, N. J. Federal Judge Guy L. Fake issued an order approving the petition.

The road claims that its action was precipitated directly by a notice served on it by the attorney-general of the state of New Jersey that he would apply to the state Supreme Court on November 2 to enter judgment for unpaid state taxes and statutory penalties thereon of $7,229,614. In company with other railroads similarly threatened by tax liens, the Central asked the Supreme Court to postpone such action for 30 days. This Justice Thomas W. Trenchard refused to do, deferring action until November 1. But a few hours after this announcement, the railroad sought the protection of the federal court by filing its bankruptcy petition.

In approving the petition, Judge Fake also signed an order directing Attorney-General Wilentz to show cause by November 1 why the state should not be restrained from enforcing its tax liens pending reorganization proceedings. He authorized the present officers to continue operation of the road until appointment of trustees within 30 days; ordered a hearing on the road's petition for November 27 and directed it to file by December 15 a schedule of its assets and liabilities as of October 30.

President E. W. Scheer, of the Central, and its parent, Reading Railroad, issued the following statement in connection with the bankruptcy move:

"Before taking this action the company had exhausted every possible means of avoiding this procedure, but the action was precipitated by the fact that the Attorney General of the State of New Jersey had served notice that he would apply on November 2, 1939, to the New Jersey Supreme Court to enter judgment for taxes and penalties exceeding $7,000,000, and efforts to postpone this action have proved unsuccessful. In this situation the company had no alternative but to seek aid of the United States District Court for the protection of its property, security holders and its creditors."

The state's claim on $3,979,185 of unpaid taxes of the road for 1932 and 1933 plus $3,250,429 of penalties for non-payment based on 12 per cent interest per annum, is the direct threat against the railroad's property from which it seeks court protection. This claim, together with those against other New Jersey carriers for tax arrearages, was upheld by a federal circuit court in November, 1938, which decree the United States Supreme Court refused to review in a denial dated March 13. As the state's largest carrier tax-payer, however, the Central of New Jersey also faces the prospect of claims for even larger amounts of taxes withheld from 1934 to date, which it is contesting before the state Board of Tax Appeals and state and federal courts. Its petition states that adverse decisions with respect to the unpaid balances of these tax levies amounting to more than $7,600,000, plus penalties, may shortly be handed down. In addition to second-class railroad taxes levied by the state, the Central has also contested local assessments since 1932, of which a total of $4,065,953 has been paid and $2,339,173 remains unpaid, excluding penalties.

As implied in Mr. Scheer's statement, the bankruptcy petition is not the first move of the road to deal with a worsening financial condition. On June 17, under the provisions of the Chandler Act, it filed with the I. C. C. a plan of interest deferment and capital readjustment which would have placed 75 per cent of the interest on $49,998,000 of general mortgage four and five per cent bond on a contingent basis for a period of five years from January 1, 1939 (summarized in the *Railway Age* of June 24, page 1094). The Commission was of the opinion that the proceedings on the readjustment plan should be postponed until the railroad settled its New Jersey tax problem satisfactorily. The instant bankruptcy move indicates the apparent intention of the management to drop the plan as unfeasible.

In its petition the Central stated that, as of October 31, estimated cash of only $2,359,793 would be available to meet matured and unpaid interest totaling $1,536,867 and unpaid taxes assessed by New Jersey for 1932 to 1938, inclusive, amounting to $11,651,082, exclusive of penalties. In addition, further state taxes of $3,415,922 fall due December 1. Cash on hand as of October 18 amounted to $5,136,923; unpaid drafts totaled $314,142, leaving a cash balance available of $4,822,781. The statement estimates cash receipts, October 19 to October 31, inclusive, of $2,070,982 and cash requirements during the same period of $2,033,970, exclusive of interest, taxes and arrearage penalties. As estimated, net cash receipts for the period would be $37,012, resulting in a cash balance on October 31 of $4,859,793. Minimum amount required for current working capital is set at $2,500,000, leaving available cash of $2,359,793, as stated above.

The Central of New Jersey is a relatively short but compact property extending from Jersey City, N. J., (with water connections to New York) westerly to Wilkes-Barre, Pa., and Scranton and southerly to the New Jersey seashore and the Delaware river. Its chief activities are those of hauling anthracite from Pennsylvania mines, carrying suburban passengers in and out of New York and serving as terminal carrier and New York gateway of the Reading and the Baltimore & Ohio. The former road owns $15,494,000 of the Central's $27,436,800 stock outstanding and many higher officers serve both roads. The Reading is itself controlled by the Baltimore & Ohio.

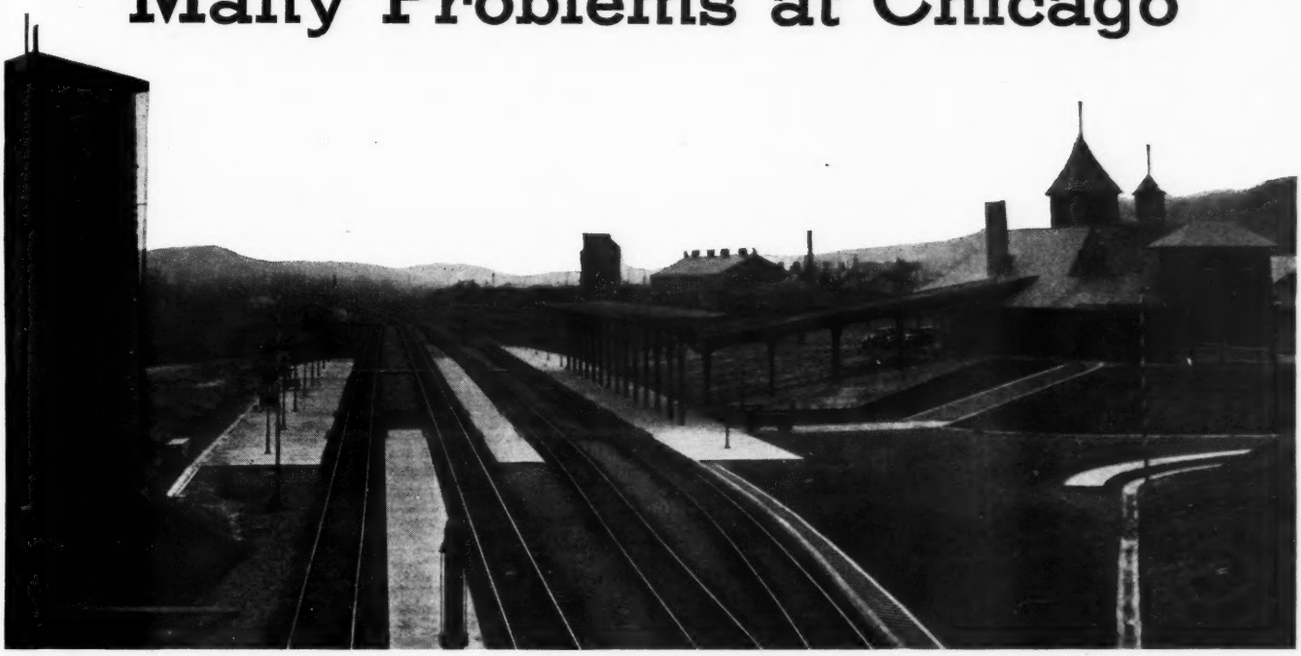
Outstanding capital stock of the road totals $27,436,800 and outstanding funded debt, consisting of general 5s, and general 4s, both due July 1, 1987, totals $48,824,000. Total capitalization as of December 31, 1938, amounted to $77,367,800. Total operating revenues in 1938 amounted to $29,251,620 and total operating expenses to $21,720,016. Net loss for the year was $4,264,825.

The last net income reported was for 1931, since which time the road has suffered net losses each year.

A dividend of $8 per share was disbursed in 1931, since which date no dividends have been paid. In each year 1923 to 1930, inclusive, Central stockholders received $12 per share.

ELECTRIFICATION OF AN 87-MILE STRETCH of the Sorocabana railway, Brazil, is to be undertaken by the Department of Communications & Public Works of the state of Sao Paulo, which owns and operates the 1,315-mile meter-gage road. The federal government of Brazil has issued a decree authorizing the secretary of the department to take such steps as he may deem practicable toward the electrification project. According to the decree the department will equip the double-track section between Sao Paulo and San Antonio of the main line for a 3,000-volt d.c. propulsion current. The work from Sao Paulo to Sorocabana must be terminated 24 months from date of the contract and the remainder of the line during the following 12 months.

Bridge and Building Men Study Many Problems at Chicago



The Station Facilities of the Delaware & Hudson at Whitehall, N. Y., Show What Can Be Done in Modernizing Old Facilities

SUPPLEMENTING a running report of the convention of the American Railway Bridge and Building Association that appeared in the *Railway Age* of October 28, together with abstracts of one technical paper and three committee reports, excerpts of the five remaining committee reports and two papers that were included in the program appear below. The papers, by G. A. Haggander, assistant chief engineer, Chicago, Burlington & Quincy, Chicago, and A. T. Hawk, engineer of buildings, Chicago, Rock Island & Pacific, Chicago, covered respectively, The Strengthening of Old Bridges for Present-Day Traffic, and Today's Requirements in Railway Structures. The committee reports embraced the following subjects: Glazing Maintenance in Shops and Enginehouses, The Use of Preframed Treated Timber for Replacement Purposes, The Maintenance of Shop and Enginehouse Roofs, Bridge Painting Problems Resulting from Deferred Maintenance, and Present-Day Methods of Safeguarding Bridge Structures.

Discuss glazing, preframing, bridge painting, roof maintenance, building requirements and strengthening old bridges at intensive meeting

Part II

Strengthening Old Bridges For Present-Day Traffic

By G. A. Haggander*

The decision whether a bridge should be strengthened or replaced must be based on comparative cost estimates, taking into consideration the added life to be obtained in the strengthened bridge, with due regard to possible future increase in live loadings. Wood trestles often require strengthening, and this type of bridge is well adapted to it. If the weakness is in the stringers, additional ones can be provided. If the number of piles is not sufficient, helper piles can be added. If the opening can be reduced in size, piles can be driven each side of the cap, and cross-capped under the old cap and between the old piles. In other cases, the complete rebuilding of trestles can be deferred by driving new bents between the old ones. When a large program of strengthening trestles is to be carried out, considerable economy can be effected by doing it with proper equipment.

Concrete or stone masonry structures do not usually lend themselves to strengthening, but iron and steel structures are generally adapted to a certain amount of strengthening. In general, the strengthening of a span under traffic is undertaken only to increase the strength of certain weak parts, rather than to strengthen the span as a whole. In this work, the physical condition of the structure to be repaired or strengthened must be determined by a careful field inspection, and the kinds of metal of which the various members are made should be determined. Furthermore, the unit stresses in the bridge, under the load for which it is to be reinforced, should not exceed 85 per cent of those permitted by the Rules for Rating Existing Iron and Steel Bridges of the American Railway Engineering Association.

Reinforcing may be required in practically any part of

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plate girders. The end stiffeners may be reinforced by adding angles or plates. If the web was not spliced originally for moment, it may be so spliced and considered effective in resisting moment. The flange section may be increased by adding cover plates. Fusion welding may be employed to supplement flange riveting; to weld the flange angles to the web to secure good contact between the end stiffeners and the flange angles; and also to strengthen web splices. Inadequate lateral systems, especially those composed of rods or bars, should be replaced with riveted laterals of the required strength and stiffness.

When strengthening deck plate girder bridges having several identical spans, an economical method is to double up the spans, providing additional spans to complete the bridge; or to use three old girders in each span; or to add a new center girder in each old span. Stringer systems may be strengthened by adding cover plates to existing stringers, or by adding new stringers. The addition of stringers may require the reinforcement of the floorbeams but they give greater strength at the connections to the floorbeams. Where extensive strengthening is to be done on a number of identical girder spans, one new span may be provided and substituted for one of the spans, which can then be strengthened without interference with traffic. Continuing the work, each successive span can then be replaced by a span that has been taken out and strengthened in this manner.

The strengthening of trusses is more difficult than the strengthening of girders and floor systems. Here, the connections often determine the strength of the span. Furthermore, the reinforcement of compression members requires careful investigation. The chord members of many old bridges are unsymmetrical in section and function as eccentrically loaded columns. This condition may be corrected by adding metal in the proper location. A small amount of metal placed in this way will often increase the rating of the member considerably. One of the problems encountered in reinforcing compression members is to introduce the dead-load stress into the additional material. If this is not done, full value cannot be obtained from the new material.

The reinforcement of deck truss spans is frequently accomplished by the addition of a center truss. In a single-track bridge this is comparatively simple, as ample bracing may be applied to make the three trusses deflect alike. The addition of a center truss in a double-track deck truss span that has only two trusses creates difficult problems. Here the tracks may be loaded either separately or simultaneously, and it is not economical to introduce enough bracing between the trusses to make them act together.

Considerable use is being made of electric arc welding in the strengthening of bridges. The method is still in the early stage of development, but it has great possibilities and will be extended as the art is improved.

Discussion

Mr. Haggander was asked whether trouble was experienced from shrinkage where extensive welding was done, and replied that this has occurred, but that experience has shown that it can be overcome with the exercise of care. The discussion then turned to the methods of removing and replacing cover plates with new material, and the methods to be followed in doing the welding after the plates are in place, together with the requirements for carrying traffic while the work is under way. The conclusion was that each case is a problem in itself and must be solved in the light of local conditions and train schedules. The remainder of the long discussion which followed the presentation of this paper dealt very largely with details of field and shop welding.

Today's Requirements in Railway Structures

By A. T. Hawk*

No period in railway history has seen so many or such radical changes in operating methods as have occurred during the last decade, or such marked changes in the methods of handling traffic. These changes have had their repercussions on buildings, some of which have been abandoned or altered as traffic has fallen off; as departments or forces have been reduced or consolidated; or as methods have been revised. There is no reason to believe that these changes will not continue in the future as they have in the past.

With this background, let us consider how we are to meet today's requirements in today's structures. In giving this consideration, we must look as far into the future as we are able, to insure that we do not fall into uneconomical practices. As the first item, I would retire all surplus buildings, making sure, however, that there is no prospective use for them. To do this will be of advantage in several ways: First, it will eliminate the necessity for maintaining non-productive property; second, it will reduce the value of the property upon which taxes are assessed; and third, considerable material will be salvaged for use in maintaining other structures.

Roofs have been patched and repatched until many of them can no longer be maintained with economy. Since the roof is one of the most important features of a building, it should be replaced with material that will have long life and low maintenance cost. To attain this result, however, the material must be of good quality, and I would use only the best. The use of cheap roofing materials is never economical, except for temporary structures.

When a frame building is erected or the lower members require renewal, creosoted material should be used for all members below the floor line, including sills, floor joists and sub-flooring. These members are more exposed to decay-producing conditions than others, and are usually the first to need renewal. Furthermore, this will insure in large measure against termite attack.

In this day of insistent demands for greater economy, no building that is to be heated should be allowed to go without insulation. This is emphasized, for the railways are far behind other industries with respect to the insulation of their buildings. When a building is constructed, insulation should be applied. As regards existing buildings, insulation can be applied to best advantage where they are undergoing general repairs or remodeling. Many types of insulation are on the market today, designed to meet every condition that may arise, but they should be used only for the purpose for which they are designed, that is, to reduce the heat losses from the building; they should never be substituted for structural members.

Toilet facilities are generally more out of date than any other facilities we are to consider. This is particularly true of passenger stations, in some of which conditions are little less than disgraceful. The railways are beginning to get back some of the passenger business they had lost to other forms of transportation, but to hold it they must provide decent facilities for their patrons,

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a thing that is not being done at many stations, where toilet rooms are poorly lighted, unclean and generally offensive.

Toilets for shops and other places where there are large groups of employees should be so located that they are easy of access, to reduce the time consumed in reaching them. The number of units should usually be somewhat in excess of state or municipal requirements, so that there will be ample accommodations during the rush period of the day, which is generally shortly after starting time. This will cut down the unproductive time of the forces, which at the present wage rates will warrant a considerable expenditure for extra fixtures. Sanitary wash fountains are economical in first cost; they require less piping, reduce floor space and are more sanitary in use than the usual type of individual wash bowls.

Requirements for lighting are more exacting today than ever before, for poor lighting is decidedly poor economy. All buildings should be designed to take the fullest advantage of day lighting. Special attention should be paid to the arrangement, number and spacing of the lighting units, to simulate daylight as nearly as possble. While these principles should be followed in all buildings they are specially important in offices and shops, to increase the efficiency of the employees, and in the latter to increase safety. Advantage should also be taken of the newer types of lighting equipment that are now available, both for the purpose of making the illumination more effective as well as to conserve the cost of the lighting current.

The building officer of today must reorient himself and start on a new basis. Where he has thought in terms of low initial cost, he must think in terms of long life and low maintenance cost. Where he has considered appearance as paramount he must give equal consideration to utility. He must think in terms of the new materials that are now available for his use, and less in terms of the materials that he has always looked upon as the staples for his work. In short, he must accustom himself to new designs, to new forms of construction, to new requirements in buildings and to the use of materials with which he is now more or less unfamiliar. Those who are unable or unwilling to do this must stand aside for those who can and will do so.

Glazing Maintenance in Shops and Enginehouses

The Committee on Glazing Maintenance in Shops and Enginehouses, of which F. H. Soothill, chief estimator, Illinois Central, was chairman, set up the most important factor in economical glazing maintenance as the proper maintenance of the wood windows and doors themselves and the application of paint at regular intervals to prevent moisture from entering the construction joints. With the entrance of moisture into wood sash, the committee said, the alternate wetting and drying out processes hasten decay and loosen the rails, stiles and muntin bars so that when an attempt is made to raise or lower the sash, the putty and glazier's points become displaced and eventually glass breakage results.

Important as is the painting of wood sash, the committee cautioned that the periodic painting of steel and sheet metal sash is imperative, especially around shops and enginehouses.

The committee gave considerable attention to the construction of the window sash, pointing out that without sound construction it is impossible to expect satisfactory glazing. In this connection it spoke of the use that is being made of creosoted lumber for sash, citing the experience of several roads, one of which has employed creosoted sash in shop and engine terminal buildings for the last 14 years with complete success. Treated millwork, it said, is now available throughout the United States through leading manufacturers at very little, if any, increase in cost over untreated millwork, and its use should be given favorable consideration wherever it is known from experience that sash and woodwork will be subject to decay or termite attack by reason of service conditions.

Turning to the various types of glass available, the committee discussed, in turn, clear window glass, obscure glass and wire glass, pointing out the relative merits of each type for various purposes in various kinds of railway buildings. For wood sash divided into lights not exceeding 12 in. by 24 in., it said, single-strength glass will prove satisfactory. For sizes of wood sash larger than the foregoing, and for all steel sash, it recommended the use of double-strength glass. Furthermore, where service conditions are unusually severe, the committee suggested the advisability of using ¼-in. wire glass.

Concerning glazing itself, the committee stressed the importance of using quality putty for wood sash, stating that it should be obtained only from reliable manufacturers. Being a comparatively cheap item in relation to the cost of the labor for its application, the committee emphasized that the best quality of material is eventually the least expensive. As a substitute for putty, especially for steel sash, the committee recommended the use of glazing mastic, a material which it said retains a softer body indefinitely, provides some degree of elasticity in the bond between the sash and the glass, and permits slight deformation in the pane of glass without its being cracked or broken. Since the perfection of the calking gun, it said, glazing can be carried out economically and more satisfactorily with any one of a number of high grade glazing mastics than with putty. Although glazing mastics are higher in cost than the best grade of putty, the committee continued, the difference in cost will be offset fully through the saving resulting in labor expense if the application is made by the gun method.

As one of the more important means of reducing glass breakage in shops and enginehouses, the committee called for greater co-operation on the part of mechanical department forces. While expressing its belief that the average shopman is careful of window glass in the interest of insuring better working conditions for himself, the committee spoke of carelessness in washing windows with long-handle washing brushes and with water under high pressure. In this regard, it condemned particularly the use of water from boiler washout lines where the pressure usually averages from 100 to 110 lb. As another instance of the need of greater co-operation on the part of mechanical department forces, it cited the experience of one road which reported that the vibration in some of its enginehouses is so great when locomotives are being drafted or are about ready to pop off, that window panes are continually being broken. Such vibration, the committee contended, could be eliminated by more careful firing.

As other means of avoiding glass breakage, the report recommended greater care on the part of mechanical department employees when laying tools, small repair parts, etc., along the sills of windows; the equipping, whenever possible, of the windows in large shop buildings with mechanical devices for opening and closing the sash; and the installation upon supports independent of the building foundations of all machines that have a

tendency to vibrate excessively or which produce an impact.

Discussion

The discussion of this report brought about clearly that creosoted window sash have been used in shops and enginehouses to large advantage by several roads, and that the glass in such sash can be stopped in successfully by either treated wood beads or a specially prepared tar compound. At the same time, examples were cited to show that treated sash have a much longer life than untreated sash under the severe atmospheric conditions present in enginehouses, and that their initial cost is relatively little more than that for untreated sash. It was also brought out that in the interest of economy, all sash, and especially skylights, should be removed from existing structures where not needed, but only with the consent of those occupying the buildings and where electric lighting charges would not be increased thereby.

The Use of Preframed Treated Timber for Replacement Purposes

To preframe or not to preframe treated timber for replacement purposes was the question that a committee of which Neal D. Howard, engineering editor, *Railway Age,* was chairman, endeavored to answer, construing the word "replacement" to mean out-of-face renewals as well as patch repairs. In its investigation, the committee found that among the large number of roads which employ treated timber for new construction and make it a practice to preframe this timber, the practice of preframing timber for replacement purposes is also extensive, for both out-of-face renewals and for alterations and patch repairs, although widely varied as to extent between the various roads.

Typical of the many purposes for which preframed treated material is being used are the following: In bridges and trestles for caps, stringers, guard rails, bents, sills, ties, spacer blocks, bracing, hand rails, fenders, backwalls, walkways, and water-barrel and refuge bays; for water tanks and their supporting frames; for replacements in coaling stations, highway bridges, wharves, piers, docks and lighters; and for the replacement of trunking, capping, scale pit walls and scale decks, sand bins, enginehouse jacking timbers and turntable center blocks and pit wall timbers. A number of roads, in addition, have used pre-sized and cut treated planking for a wide range of platforms, and for platform joists and curbs, and several roads have used pre-sized and cut timber or lumber for building supports or foundations, sills, first-floor joists, rafters and sash.

Wherever possible, according to the committee, the necessary detailed information to insure the accuracy of all preframing work is secured from the original detailed plans of the structure involved. However, where plans are not available, many roads find it feasible to make the necessary field measurements and sketches. The importance of this latter detail of preframing, the committee said, should not be overlooked.

The report then discussed the methods of preframing employed by various roads, pointing out that while many roads do this work with company forces in company-owned bridge and building shops or preframing plants, others have it done for them at well-equipped commercial plants, which are usually able to handle all classes of sizing, framing and boring work. With regard to the matter of plant inspection, the committee pointed out that, as in the case of making preliminary measurements and the preframing operations themselves, such inspection of preframed materials before they are shipped to specific jobs is important to prevent incorrectly framed or bored pieces being received in the field. With adequate precautions in this regard, it said, it is rare that misfit pieces arrive on the job.

On the basis of the experience of its own members and answers received, the committee listed the following advantages to be gained through the use of treated material for out-of-face replacements or for alteration and repair work: Increases the life of the timber by insuring the maximum depth of treatment on all exposed surfaces, thus guarding against partial destruction by decay or by attack by termites or other wood-boring insects; insures the maximum return upon the investment in the timber and its preservative treatment; insures better workmanship and more accurate fit if properly done; is faster and more economical than field framing; reduces the time required for erection or installation, which affects costs favorably and may prevent delays to traffic; permits the employment of a less skilled field force; minimizes the frequency of renewals, with corresponding savings in labor costs; and insures the greatest salvage value of the material in the event that it is released from a structure in subsequent dismantling or out-of-face renewal operations.

The committee cited the following disadvantages in preframing as having been reported by various roads: The expense, time and often difficulty in obtaining adequate and accurate field measurements, and in making plans; the long interval between the decision to make replacements and the actual work, necessitated by the time required to secure measurements and to preframe and treat; the possibility of misfits, requiring field cuts or boring in any event, defeating the purpose of the plant preframing, and sometimes causing waste; and low salvage value for this material if released, which, if not a standard piece, would require reframing for further use.

In conclusion, the committee made the following statement:

"Long experience by many roads has shown that, in most instances, it is entirely practicable to preframe treated material for replacement purposes—that, properly supervised, errors need not and seldom occur, and that, in the long run, through greater service life of the timber, more accurate fit, more economical framing costs and increased speed of installation, preframed treated timber is more satisfactory and more economical than treated timber framed in the field.

"It is our recommendation therefore, that increased consideration be given to this practice, to the end that the highest grade of workmanship and the largest possible economies will be effected in railway bridge and building work."

Discussion

Much of the discussion of this report turned upon the methods for simplifying the preframing of the timber for repair purposes so that stocks of material can be kept on hand for quick use. It was the general opinion that while many roads are now preframing treated material for use in the replacement of entire structures, the roads as a whole are not doing such a good job with respect to piecemeal replacements. It was emphasized that the practice of preframing and treatment makes it possible to use the lower grades of lumber and timber containing considerable sap, which are not suitable for use without

treatment, and that treatment without preframing is a sheer waste of money and effort.

The Maintenance of Shop and Enginehouse Roofs

This report, prepared by a committee of which G. S. Crites, division engineer, Baltimore & Ohio, was chairman, first discussed the unusually severe problems encountered in the maintenance of shop and enginehouse roofs, which it said were due primarily to the acid and moisture-laden vapors which prevail within and about these buildings. In this connection, it said, "Ventilation must be provided within these buildings to carry off gases and moisture. More shop and enginehouse roofs fail from interior or underside decay than from exterior causes. Regardless of how carefully a wood deck may be constructed, vapors penetrate the planking, condense on the underside of the covering, and start rot, not only of the deck members and their supports, but also to some extent, of the roof coating itself."

Turning to the matter of inspection, the committee said that it is advantageous to make inspections of roofs at regular intervals, and urged the importance of having inspections made by persons familiar with roofing materials and capable of judging quickly the most economical operations necessary to preserve the roofing, and, in turn, the structure. Whenever an inspection indicates that extensive repairs must be made to the roof coating, the committee recommended that careful examination be made of the supporting structure, pointing out that in many cases where the roof covering is so far deteriorated, it will be found that the sheathing is in such condition that it will not last the life of another roof covering, and that extensive repairs or renewals must be made.

As a further precaution when making major repairs to a roof, the committee suggested that the examination include the underside of the roof deck to see that no excessive stresses are being imposed on it by improperly located line shafting, cranes, hoists or other heavy equipment. This is important, the committee said, because the sag in any part of a roof will frequently crack open what, under normal conditions, would be a good tight roof. For making repairs to wood roof decks, the committee favored the use of treated wood for both supports and sheathing, stating that wood suitably treated for the purpose adds no additional fire hazard and is well worth the extra cost. It also recommended that this wood be preframed before treatment, and that study be made to secure metal fastenings that will not corrode to the point of failure before the treated wood fails.

In the remainder of its report, the committee discussed best practices in making repairs to roofs covered with wood or asbestos-cement shingles, slate, built-up roofing, roll roofing, corrugated galvanized steel, corrugated galvanized iron, corrugated asbestos-protected metal, and corrugated asbestos-cement sheets, pointing out the problems presented in repairing each type of material and the types of fastenings and flashings that can be used to best advantage. With regard to flashings, the committee said that in all locations where severe corrosion might be expected, these should be of superior materials, such as copper, lead, or lead-clad steel, pointing out that weak flashings are often the cause of the partial destruction of otherwise excellent roofs. Where flashings and metal roofs are of different metals, it cautioned that care should be taken that the flashings are well coated with asphalt or similar material to preclude electrolytic action. The same precaution was urged in selecting the fastenings for metal roof coatings, it being recommended that these should be selected with the view that they will outlast the roofing which they secure in position.

The committee offered the following conclusions: The greatest economy in roofing repairs is effected by making the necessary repairs as soon as defects are discovered. Many a good roof has been destroyed by the wind getting beneath it at one small opening. Much damage can be done to the contents of buildings by small leaks that can be stopped readily at nominal cost.

Discussion

The discussion revolved around two points: (1) The inspection of shop and enginehouse roofs, in which examples were cited of roofs that had been found to be sound under cursory inspection, but which, shortly thereafter, by reason of failure, proved to have been in bad condition; and (2) the use of zinc-coated wrought-iron nails in place of zinc-coated steel nails or copper nails on buildings of these classes, cases being cited where steel nails failed completely within 10 years and where copper nails had only a slightly longer life.

Present-Day Methods of Safeguarding Bridge Structures

In a report prepared by a committee of which E. C. Neville, bridge and building master, Canadian National, was chairman, the committee gave special attention to bridge substructures, both as exposed to natural causes of damage and deterioration, and as affected by carrying out repair operations. From replies to a questionnaire, the committee found that financial conditions in recent years have compelled many roads to resort to means not usually prescribed under more normal circumstances as the most permanent methods of safeguarding their structures, but which would preserve them in a safe condition for a reasonable length of time. From this experience, it felt that many benefits have been derived, especially in requiring engineering and bridge and building officers to devise ways and means of repairing and safeguarding structures adequately, with substantial savings over former methods.

At the outset, the committee stressed the importance of making frequent and thorough inspections of structures, pointing out that decay, settlement and undermining are sometimes encountered in pile or frame trestles, any of which may lead to disaster if not detected and overcome immediately. Just because a surface inspection shows no signs of decay, it said, it should not be taken for granted that a pile is sound.

Discussing the failure of various members in timber structures, the committee stated that when piling has decayed to the point where it does not function properly, renewal or replacement should be undertaken immediately. Where settlement of pile structures has occurred because of insufficient penetration of the piles, it recommended excavating a trench along both sides of the bent and bolting heavy timbers to the piles so that they have bearing on the ground, or that a concrete mat be poured in the trench around the piles to give better bearing for the timber.

Turning to concrete structures, the committee gave particular attention to the hazards of wash and scour, pointing out that wherever structures rest on soil subject to such action, special attention should be given them by making frequent and careful underwater inspections, by excavation, if necessary. It recommended that wher-

ever there are possibilities of scour, frequent studies should be made of stream conditions, both upstream and downstream to check any destructive influences. When undermining has taken place, it said, it will be necessary to take immediate steps to save the structure, either by underpinning it or by driving sheet piling and grouting under the footing. If the condition cannot be corrected by underpinning, the committee continued, the reconstruction of the pier may be the only safeguard.

The committee then discussed the repair of defective bridge seats with quick-hardening compounds, and their renewal where necessary by casting a block of reinforced concrete of the proper size and making the replacement under traffic. Continuing, it discussed the repair of disintegrated concrete and stone masonry, pointing out that to prevent the continuation of such disintegration, the best action to take is to remove all loose or scaling material and then to encase the entire structure with reinforced concrete, well anchored to the old concrete; with complete renewal, in the case of piers, of their tops to a depth of two to three feet below the bridge seat. Another form of repair discussed by the committee was the strengthening and solidifying of old stone masonry substructures with rubble cores, by forcing cement grout into the cores either by gravity or under pressure.

Returning again to the subject of scour, the committee referred to the success which the Chicago & North Western has had in preventing this form of damage by the installation of fascines around piers, which settle into place when scouring starts, and also to the 60 to 90-ft. concrete piles used in the construction of new piers and abutments on the Chesapeake & Ohio to preclude the serious consequences of undermining. It also cited the recent practice of the Canadian National in constructing piers and abutments of 12-in. by 12-in. steel H-beam piles, tied together by welding in struts and angle braces. In this latter regard, it said that in some cases the piles employed have been driven to a depth of more than 100 ft.

In conclusion, the committee pointed out that the inspection of substructures is one of the most important duties of the bridge and building forces.

Discussion

The discussion of this report consisted almost entirely of a recital of experiences by various speakers as to conditions which had been discovered and the methods followed in overcoming the trouble, principally with scour and failures of bridge seats. The major portion of the discussion, however, was directed to the uses of fascines to prevent scour around piers and in front of abutments, the general opinion being that this is one of the best methods that can be followed, being preferable to the unloading of heavy stone, thrown in loosely.

Bridge Painting Problems Resulting from Deferred Maintenance

Basing its report largely upon replies received to a questionnaire, a committee of which R. W. Johnson, assistant engineer, Chicago, Milwaukee, St. Paul & Pacific, was chairman, advised that many roads admitted deferred bridge painting, at least to the point where the paint film has begun to break or scale, but that practically all of them felt that in this no harm was done to the steel.

Unlike their thoughts in this regard, however, practically all of those answering the questionnaire admitted that deferred painting increases costs materially when painting is undertaken. This, they agreed, arises from the following causes: First, more labor is required for cleaning; second, more material and labor are required for spot painting; and third, uneconomical painting, when money is available, because of the need for filling out the painting crews with inexperienced men and an attempt to crowd too much work into a limited season. As regards cleaning alone, figures submitted by various roads showed that whereas cleaning costs normally average about 30 per cent of the total cost where paint is properly maintained, they increase with deferred painting to from 35 to 40 per cent of the total cost for the first, to approximately 50 per cent for two years, and to as much as 75 per cent for three years. In addition to the increased cost, most of the roads reporting agreed that where pitting and corrosion have occurred, subsequent paint coats are more likely to fail sooner, unless cleaning is done with a sand-blast gun.

To stay or remedy the effects of deferred general painting, many roads reported that they have resorted to spot painting, and that in this they have been using a wide variety of special coatings, such as bridge cement, car cement, crude oil, asphalt oil, asphalt paints, roofing compounds, tar paints, grease-like rust preventatives and rust removers and inhibitors. It was pointed out that while some of these special coatings have proved unsatisfactory, a number of roads are beginning to standardize on others of them.

Continuing its report, the committee discussed the relative advantages and disadvantages of the various types of paints and special coatings, citing the experiences of a number of roads to indicate premature failures or unusual successes. An outstanding example cited was that of a southern road with 20,631 lin. ft. of steel bridges, which, by employing a commercial rust-removing compound applied by regular bridge gangs, reduced its annual cost of bridge painting (for both labor and materials) from approximately $36,000 in years prior to 1931, to approximately $9,000 since that time, and with entirely satisfactory results.

All of the roads reporting stressed the importance of careful inspection prior to painting, and practically all of them advocated the use of power tools for cleaning to catch up on deferred work. Seventeen of 29 roads stated that they employ spray-painting equipment.

In conclusion, the committee said, in part, as follows:

"We find that the railways of this country and Canada are making every effort to keep their bridges in first-class condition. Paint is generally no longer applied at regular intervals of three or four years, or always kept up to present a pleasing appearance. Each paint job must now give its limit of service and the need for repainting is judged on absolute necessity.

"The standard bridge paints having mineral substances for pigments and boiled linseed oils for vehicles have been so developed and tested by service that under ordinary weather and climatic conditions they will give 4 to 10 years protection. The largest problem in keeping steel bridges protected is that caused by the action of brine and locomotive gases, which soon break down the paint film and then corrode the steel. Experience has proved that standard bridge paints cannot stand up for any economical length of time under such conditions, and that when renewed, the surfaces involved must be cleaned thoroughly. Sand blasting will remove all rust and scale down to clean metal. However, this reduces the structural sections and cannot be employed economically every time that steel exposed to brine or gas action needs protection.

"Oils or greasy coatings with rust inhibitive substances which can be applied over old scale and rust, if applied

regularly, afford maintenance men the best opportunity to keep their bridges in first-class condition. It would seem that on lines subject to heavy brine, or in locations where bridge structures are exposed to locomotive gas action, they should prove ideal substances for all metal below the floor in that they can be applied by either spray or brush, without intensive cleaning and without skilled labor.

Discussion

This report gave rise to a long discussion over the painting of rivet heads, experiences being cited by a number of officers indicating that paint normally fails over the rivet heads before it does over the plates and structural sections. The conclusion was that it is desirable to prime the rivet heads and give them one coat of paint before the general painting of the structure is started. This applies particularly to field-driven rivets, since they appear to be more easily corroded than shop-driven rivets. There was also a long discussion on the use of rust inhibitors in place of paint. The question arose as to whether it is possible to return to the use of lead-and-oil paints after the application of the rust-inhibiting and asphalt preparations. Information was given stating that with some of the inhibitors it is possible to return to the normal paints, although this may require several years.

Open Section Sleeper on Way Out

Room car forecast as future accommodation at annual meeting of traffic officers at Hot Springs

NO more open section sleeping cars will be constructed for use on the railways of the United States, according to opinions expressed at the Eighty-First annual meeting of the American Association of Passenger Traffic Officers at Hot Springs, Ark., on October 26 to 28. This forecast was based upon the enthusiastic reception of room cars by the public and the possibilities they offer for increased revenue over that derived from the present occupancy of open section cars. This growing popularity of room accommodation was also revealed in a report by E. P. Burke, passenger traffic manager of the Pullman Company, who said that during the first eight months of 1939 in which there were 25 per cent more bedrooms available than in the same period of 1938, the occupancy was between 71 and 75 per cent. At the present time, 91 roomette cars are in service, with 1,370 roomette units.

Also indicative of the acceptance by the public of higher priced room accommodations is the growing use of bedroom suits. Mr. Burke said that in one month 2½ per cent of all bedrooms available were occupied in suits of two rooms, by an average of 2⅔ passengers. In some cases passengers demanded bedroom suits instead of drawing rooms. The record of the convertible section, in which the mattress is folded back to allow dressing room space, was also cited by Mr. Burke as indicative of the trend. During the eight months from January to August, 1939, approximately 500,000 convertible sections were sold, which produced additional revenue of $621,000 for the railroads and the Pullman Company.

The meeting, over which President J. W. Switzer, general passenger agent of the New York Central, presided, was attended by more than two hundred passenger traffic officers. Practically every problem confronting passenger departments was dealt with in reports, addresses and discussions. Among those addressing the meeting were George T. Savage, manager of advertising service of the Illinois Central; Joseph Mayper, chairman of the Trans-Atlantic Passenger Conference; C. C. Bonter, passenger traffic manager of the Canada Steamship Lines, Limited, and president of the Passenger Waterlines Association; and J. Aronson, vice-president, law, of the New York Central, who spoke at the banquet on October 26.

Officers elected for the ensuing year are: C. C. Bonter, president, passenger traffic manager of the Canada Steamship Lines, Limited; vice-president, Robert Thomson, passenger traffic manager of the Chicago & North Western; and secretary, B. D. Branch, general passenger agent of the Central of New Jersey, re-elected.

Drive Yourself Service to Be Established

Probably the most outstanding development in passenger service discussed at the meeting was the establishment of drive-yourself automobile arrangements for patrons of railroads. An elaborate plan, involving eleven western railroads, including the Chicago, Burlington & Quincy; the Illinois Central; the Chicago, Rock Island & Pacific; the Missouri Pacific; the Texas & Pacific; the Missouri, Kansas, Texas; the Union Pacific; the Great Northern; the Chicago & North Western; the Chicago, Milwaukee, St. Paul & Pacific; and the Chicago & Eastern Illinois, will be placed in effect on January 1, 1940, under the direction of Railroad Extension Service, Inc. As reported by H. W. Siddall, chairman of the Transcontinental and Western passenger associations, the service will start in 165 to 170 cities at a uniform rate of 8 cents per mile for short distances and 6½ cents for greater mileages of 1000 miles or more. Later, he said, the plan can be extended to other railroads and more cities. Under the plan, the railroads will take the order for an automobile when transportation is sold and the automobile will be delivered at the destination-station upon train arrival. In addition, an attendant for the automobile operating company will be at the station to direct patrons.

Eastern railroads, according to C. W. Getty, assistant general passenger agent of the Pennsylvania, are developing a drive-yourself service which will be placed in effect early next year in 75 cities and towns of a population of 25,000 people or more. The renting of automobiles will be handled through the American Drivurself Association.

A drive-yourself-service established by the New York,

New Haven & Hartford on August 2, 1938, in the territory served by its line, has met with success according to a report made by G. K. Murphy, assistant to the traffic passenger manager of the New Haven. This plan provides for a uniform rate that is less than the standard rate, the amount being 9 cents per mile for the first 50 miles and 6 cents a mile for each mile thereafter, with a 75 cent service charge. A tourist service carries a rate of $10 a day or $50 a week. The user of the service is given a free taxi ride from the station to the garage and a free reservation telegram. Credit cards are issued to members of reliable companies. Since the plan has been in effect, the New Haven has received about 50 letters a month asking about the service; 310 firms have agreed to use the service; and 686 credit cards have been issued.

General discussion of drive-yourself-service indicated that unless rates are low enough to compete with mileage allowances, traveling men will continue to use their own cars. It was felt that a drive-yourself-service should be successful if the number of companies operating in the United States is any criterion. In Los Angeles alone, five thousand drive-yourself-cars are being operated by individual companies.

No National Railroad Week

Plans for a National Railroad Week, to be held from May 12 to 18, 1940, were held in abeyance upon the recommendation of the Advisory Committee of the Public Relations Department of the Association of American Railroads, which considered the time inopportune in view of present world events. The report of the committee on National Railroad Week, of which C. C. Howard, passenger traffic manager of the Erie, is chairman, outlined a comprehensive program, in which every rail line of the United States, the Pullman Company and railroads of Canada and Mexico would participate. The central directing force, under the committee's plan, would be the Association of American Railroads. The estimated cost of $300,000 would be divided on a pro-rata basis.

Fifty-one separate and distinct features were incorporated in the committee's program, including advertising, proclamations by the president of the United States, governors, and mayors, participation by railway supply companies, radio broadcasts, pulpit announcements, news reels, participation by hotels, theatres and schools, a camera contest, participation by telegraph, express and railway mail services, window displays, letter stickers, decoration of railroad property, cooperation with civic clubs, a visitors' day at railroad plants, railroad exhibits, a popularity contest for women employees, a courtesy contest for all employees, a commuters contest, a beauty contest, parades, scout activities, railroads as national defense, dances and a national park year.

Advertising Makes U. S. Most Traveled Nation

The benefits of railroad advertising were described by Mr. Savage, who said in part:

"General advertising activities designed to secure as much as possible of the consumer's dollar have been intensified in recent years, which makes it all the more necessary for railroad advertising men to keep abreast of this competition in the selection of media and the presentation of sales arguments. I think we have learned the secret of American merchandising—that to hold public approval and patronage, it is necessary constantly to improve the product. And having a good product, it is possible to win customers by aggressive selling and advertising. We have adopted unusually comfortable, air-conditioned, streamlined equipment and faster passenger schedules acceptable to the traveling public, and this initial success should encourage us to continue this effort in order to maintain and perhaps enlarge these gains.

"While repetition still builds reputations, it must be repeated to the proper audience and in an impressive way. We should strive for simple and human presentations of our various messages; keeping in mind always that each advertisement should be not only a sales message but a reputation builder for the individual railroad as well as our industry. I know this is not an easy accomplishment but with our efforts, supplemented by the counsel of our respective advertising agencies, I am sure some interesting developments will occur.

"You, who have tremendous responsibilities in the development of traffic and the proper performance of passenger service, can hardly be expected to add to your myriad duties, the one of advertising. The coordination of the sales and advertising activities is of paramount importance but perhaps the major share of the advertising responsibility can be assumed by the advertising men now in railroad organizations.

"There are several points in our general program which have previously been considered but which I think are worth mentioning again, the first and on which comparatively little progress has been made, is the production and distribution of material to be used by retail merchants, travel agencies and others in a cooperative way. I know that a great deal of thinking along this line has been and is now going on and I am sure something will come of it. The second, and one where we are woefully weak, is in the preparation and distribution of railroad advertising material, especially designed for young as well as advanced school students. This has been a subject of intensive study on the part of a committee of your association and from it we all hope that some plan of a national character will be evolved to really sell the railroads to the coming generation. A great many men in this room must have seen the full page advertisement on the back page of a recent edition of the Chicago Tribune, and noticed the picture of the huge TWA airplane with the caption "Flying Classroom" and the copy which described these recent mass flights for students. This was alarming to me simply for the reason that there are far too many students, even in advanced classes, who have never been in a train, let alone have traveled on one. There is more than this evidence pointing to the necessity for an educational program among students of today, because they will become the travelers of the very near future.

"A discussion of the results of railroad advertising might be continued at some length but it can be summarized in a few words. The purpose of railroad advertising is no different from the purpose of any other advertising. The final purpose of all advertising is to move goods and to put money in the cash drawer and the final purpose of railroad advertising is to increase traffic and add to earnings. That it serves this purpose is attested by the fact that you who are responsible for not only the expenditures but also for the results,—you who have been trained to expect a dollar of value for every dollar spent—have been and are willing to invest large sums of money in the various kinds of railroad advertising.

"Railroad advertising has had a great deal to do with making ours the most traveled nation in the world. More than any other people we have the urge to escape the heat of summer and the cold of winter; to take recreational vacations and to see distant places that lie

beyond our immediate horizons. It has been the task of railroad advertising to stimulate this travel urge and to demonstrate how it may be gratified and, in my opinion, it has done that job remarkably well."

Bus Competition on the Increase

The Committee on Motor Coach Service and Competition, of which P. J. Neff, assistant chief traffic officer of the Missouri Pacific, is chairman, reported an increase in motor coach activities. Statistics filed with the commission for the first five months of 1939, as compared with the corresponding period of 1938, show an increase of about 8 per cent in gross revenue, with the reporting lines handling 36 per cent of the total of rail and bus revenue for the first five months of 1939, compared with 33 per cent for the same period of 1938. However, the report continued, the figures publicized by trade journals for the industry show an increase of 13.15 per cent in gross revenues for 1938 compared with 1937 and a total volume of both revenue and passengers in excess of that handled by all the rail lines.

There was a notable increase during the year of new modern bus terminals, constructed in many places in the United States, many with air conditioning equipment, the report said. The popular trend in bus construction is toward a smaller, lighter vehicle, with a corresponding reduction in first costs and operating costs. At the present time there are about 500 Diesel powered buses in the country and a corresponding number of air-conditioned vehicles. Some progress has been made in the development of hydraulic types of transmission for bus equipment with a view to bringing about smoother and quieter operation with reduced maintenance costs.

There is a need, the report continued, for a concerted effort by the railroads to resist to a greater extent the many applications which are being made to state commissions and the Interstate Commerce Commission for duplication of existing bus routes. There is an apparent reluctance on the part of many state commissions to deny applications where great political or other pressure is brought to bear on them, with the result that the theory of limited monopolies with proper public regulations instead of unlimited competition is in danger of being defeated, even though most of the state laws and the motor carrier act itself contemplate a reasonable restraint upon duplication of service. Unless the intent of these laws is carried out, there will continue to be a surplus of transportation facilities and needless waste.

Commercial Aviation Continues Upward Climb

The Committee on Commercial Aviation Developments, of which C. E. McCullough, general passenger agent of the Pennsylvania, is chairman, reported that commercial aviation in the United States continues a steady upward climb. Revenue miles flown in 1938 increased 4.7 per cent over 1937 and 659 per cent over 1928; revenue passengers carried, 8 per cent over 1937 and 2655 per cent over 1928; mail-pound-miles flown, 11 per cent over 1937; and express carried, 6 per cent over 1937. On the domestic lines, 110,820 flights were scheduled, of which 104,964 were started. Of those started, 95 per cent were completed. The average speed of all domestic carriers during 1938 was 163 m. p. h. The average length of a passenger trip was 416 miles. At the end of 1938 there were 791 municipal airports in the United States, an increase of seven over the previous year. Commercial air ports numbered 433, an increase of one over 1937.

In commenting upon the air lines air travel credit plan, under which companies depositing $425 are given a 15 per cent reduction in one-way air fares, the committee said that the plan has aroused the antagonism of all tourist agencies, travel bureaus, hotel porters and others who are privileged to sell air line tickets on a commission basis. Persons holding credit cards can have them honored by any tourist agency or others, for which service the agencies receive no compensation. Tourist agencies have organized and have employed counsel to represent them at a preliminary hearing and a public hearing to be held by the United States Civil Aeronautics Authority in the near future. The tourist agencies contend that this credit plan is definitely discriminatory and a reversion to the old rebate system, which was long ago outlawed by all reputable enterprises.

* * *

State Officials Explode "Barrier" Propaganda

Representatives of 14 inter-mountain states meeting in Denver recently adopted resolutions which are a complete answer to the persistent ballyhoo of the truck faction that "ports of entry" and state limitation of motor vehicle sizes constitute "barriers" to interstate commerce. A few of the "whereases" adopted indicate what the state officials think of this "barrier" propaganda, to wit:

WHEREAS, states in the West where distances are great and populations small have found from experience that the only feasible and economical way to collect these taxes is through ports of Entry, and;

WHEREAS, The Council of State Governments recommended that further study of this question be undertaken in the field to determine if any Ports of Entry are operating as trade barriers.

NOW, THEREFORE, Be is resolved that this conference go on record as declaring that Ports of Entry in the states represented here do not constitute trade barriers within the meaning as defined by the Council of State Governments, and

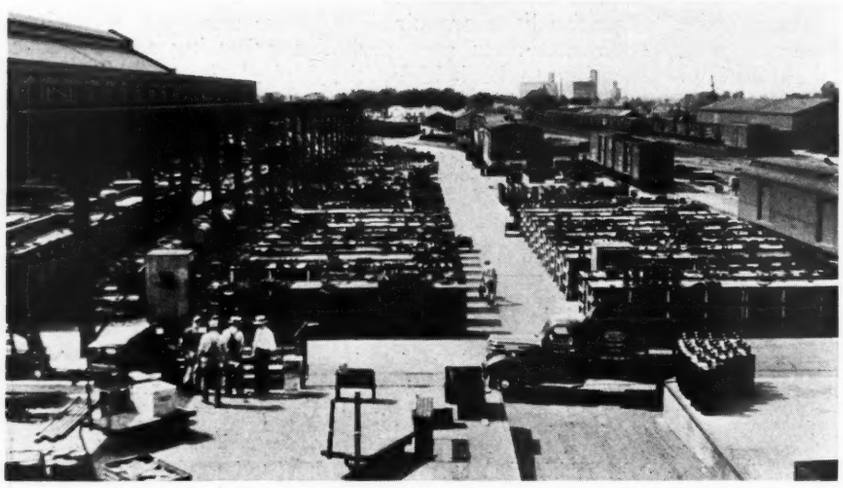
BE IT FURTHER RESOLVED that this conference go on record as endorsing the operation of Ports of Entry in the several western states represented until such time as a better or more economical system be devised for collecting taxes justly levied against interstate and intrastate operators alike for the maintenance and construction of highways.

WHEREAS, uniformity in state regulations as to the size and weight of motor vehicles is a desirable end, it is recognized that such uniformity in the maximum limits as to the size and weight of trucks is necessarily dependent upon substantial uniformity in the highways over which they operate, and;

WHEREAS, there is no present uniformity in the capacity of roads and bridges in the several states and no uniformity in the ability of the people of such states to construct and maintain roads of such capacity as would be required to accommodate the trucks and trailers now permitted in many of the states.

NOW THEREFORE, Your committee on Transportation proposes to this conference that those of us in attendance frankly admit and recognize the present impossibility of agreement and adoption of uniform regulations as to the size and weight of trucks engaged in interstate commerce and urges the conduct of studies by the respective states bearing upon scientific and proper regulations in that respect.

N. Y. C. Uses Rolling Bins in Supply Work



In the Material Yard at Indianapolis

Self-service wagons save workers steps and cut waste in delivery service — More steel shelving

WHILE interest in the shops of the New York Central at Indianapolis, Ind., centers at present chiefly around the fact that coaches for another Mercury train have just been constructed there for the high speed passenger service between Cleveland and Detroit, it is noteworthy that the exceptionally fine facilities at Indianapolis for handling railway material have not only been well maintained throughout the depression but have been improved by the addition of steel shelving and by the use of substores and portable bins for supplying the shops with material.

The New York Central keeps about two million dollars of unapplied material at its Beech Grove (Indianapolis) shops where the general store is situated. This store includes a modern three-story brick and reinforced concrete building with an attic. The third floor is used for the offices by all departments and the balance of the building is used for storage. Surrounding the store are elevated concrete platforms, unusually extensive areas of concrete for storing material at ground level, and wide concrete roads to all shops. The store has up-to-date lift trucks, tractors, and highway trucks to handle material and sufficient containers for shipping as well as storing material in the yards and shops.

The first floor of the main store room, where the heavier material is kept, has used steel shelving for many years but the corresponding shelving on the second floor, where less bulky material is carried, was of old style wood construction until the last few years and has been gradually replaced with steel shelving of the open type. Both floors leave wide aisles between the rows of cases and also an unobstructed area in the rear of the building in which to assemble steel containers used in delivering materials to the shops or making shipments to other storehouses. As described previously in these columns the greater portion of the material for other storehouses is shipped in steel containers of the type used with lift trucks, while both containers and trailers are used locally.

The Beech Grove store is ideally arranged for centralized material handling and all material from and for other towns is stored and handled within the storehouse or as near the storehouse as practicable, while concrete paving has been laid on both sides of the locomotive erecting shop for the storage of material temporarily removed from equipment undergoing repair.

Substores Aid Economy

In order to handle small items of material economically substores have been established at three locations, one in the coach shop where passenger equipment is repaired or rebuilt and one each in the passenger car paint and locomotive shops. Each of these substores is in charge of store department employees. They are stocked only with material which is required every day. The material remains in the stock account until used and is issued over the counter on receipt of approved requisitions which are accumulated daily and forwarded to the accounting de-

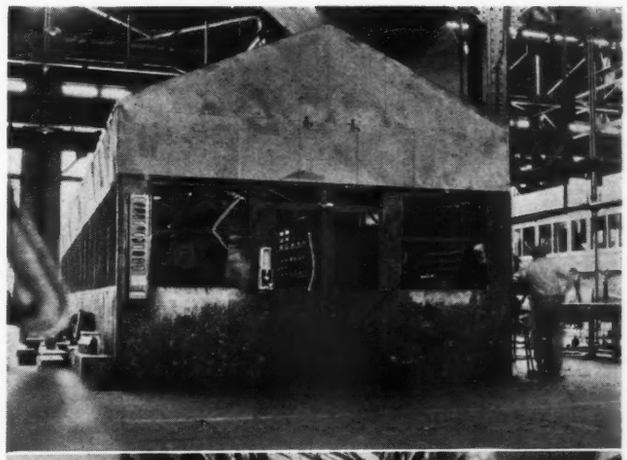
New Steel Cases in the Storehouse at Beech Grove

partment. Each stockman has a telephone or has telephone service nearby with which to arrange for the delivery of materials to replenish the regular stock in a hurry when it becomes necessary, but, otherwise, the stock is replenished without taxing the normal delivery organization or delaying the material using forces.

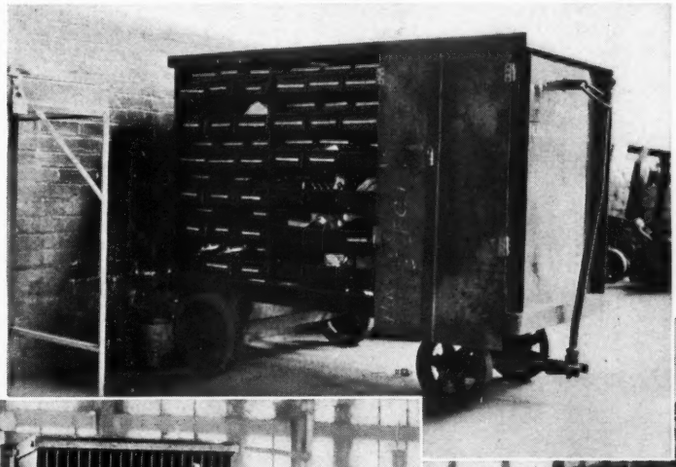
Supply Wagons Popular

During the recent years four-wheeled material cabinets have been improvised for the convenience of men in other locations. These supply wagons were made in the shops by welding a rigid framework of steel to a low wheel steel trailer of the platform type and fitting these wagons with metal drawers or boxes in which to keep material. Four wagons are assigned to the locomotive erecting shop and are stocked with boiler studs, machine bolts, nuts, washers, cotter keys and pipe fittings. Each wagon is approximately 6 ft. long 3 ft. wide and 3 ft. high and has 54 drawers on each side or a total of 108 drawers to each wagon. The drawers are further subdivided to hold more than one size or item of material. A somewhat smaller wagon is fitted with drawers and shelves to hold material used in repairing air brakes, injectors, lubricators, stokers, safety valves, feed water heaters, and steam heat valves. Another wagon is fitted up to hold electrical material. Still another wagon, somewhat larger, is equipped for air brake material used on the freight car repair tracks, such as pipe fittings, gaskets of different kinds, angle cocks and air brake hose, while another wagon is specially constructed with different sized bins and racks for the passenger car trim and hardware.

Only material which is used daily in the general repair work is kept in the wagons and they are placed conveniently for the men who use the material. The location and materials kept in the wagons was determined by a



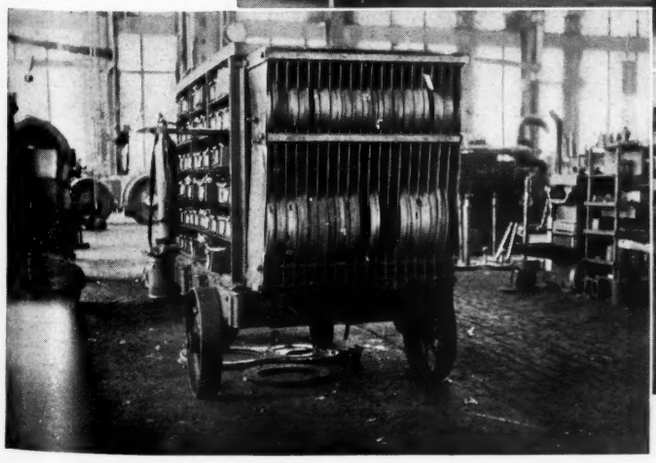
Upper—Sub Store in the Coach Shop. Lower—One of the Aisles in the Sub Store

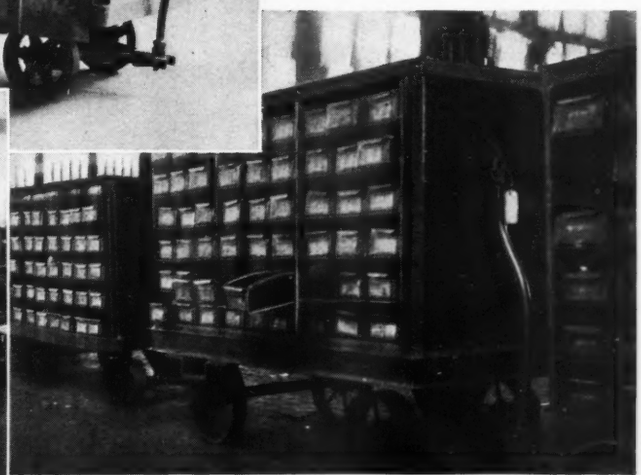


Left—Electrical Materials

Lower—In the Machine Shop

Lower—Supplies for Air Pumps and Boiler Fittings





Self Service Supply Wagons in the N. Y. C. Shops

Upper—Rubber Tired Supply Wagon for the Coach Shop
Lower—Small Supplies for the Car Yard

study of deliveries of materials to the shops for a period of two to three months.

Previously the wagons were returned to the storehouse each day and the stock replenished and the wagons returned to their appointed stations before work on the following morning but this practice was eventually found unnecessary. The stock is still replenished daily but, under present practice, the withdrawals are posted by an attendant at the wagon and chargeout slips for accounting purposes are furnished for the material used each day. The stock is replenished from the general storehouse on the first morning delivery on the basis of the chargeout slips of the previous day. In this way the supply of small material is maintained without waste and without burdening the delivery system with unnecessary movements. Accounting procedure has also been simplified.

THE ARGENTINE STATE RAILWAYS have recently purchased 10 Diesel-powered, articulated, three-car trains and 7 Diesel-powered single rail-motor cars from Metropolitan Rail Cars Ganzpatents, Ltd., an Hungarian firm. Decision to assign the order to the latter was based on the fact that the company had already sold 105 cars to the system which have given satisfactory service. The cost of the cars, quoted at £293,517 ($1,546,834 at rate of exchange of 17 pesos per pound) is payable 20 per cent in cash and the remainder in eight equal payments each six months thereafter. It is expected that the deliveries will begin in eleven months. The new equipment will replace steam-driven trains on passenger runs between Buenos Aires and interior cities.

New Books . . .

Passenger Car Axle Tests. Published by the Association of American Railroads, Mechanical Division, 59 E. Van Buren street, Chicago.

This, the third progress report of passenger car axle tests now being conducted by the Association of American Railroads, Mechanical division, comprises a well-organized and informative book. The first progress report was issued May 1, 1938, covering A. A. R. 5½-in. by 10-in. passenger car axle tests from December 1, 1937, through April, 1938. The second progress report covered tests through October, 1938, and the present report brings the test data up to June 1, 1939. During this last period further tests have been made on two of three designs of axles and tests were initiated on two new designs. Seventy-five full-size axle tests have been completed to date on five different designs of axles.

Transport Control Abroad, compiled by W. Rodney Long, Transportation division, Bureau of Foreign & Domestic Commerce, U. S. Department of Commerce. 427 pages. 9½ in. by 6 in. Bound in paper. Published by the United States Government Printing Office, Washington, D. C. Price, 40 cents.

Undertaken at the request of the Interstate Commerce Commission, this extensive report, bound in book form, complements a publication entitled "Railway and Highway Transportation Abroad" issued in 1935.

Since the report deals with efforts to regulate, modify or eliminate competition between railroads and highway carriers in each country, the word "control" is a broad term covering the following subjects: (1) Legislation to regulate motor carriers; (2) legislation in countries owning their railroad network to protect their "babies" from highway competition; (3) steps by governments or by carriers themselves to "co-ordinate" railroad and highway transportation; (4) equipment and operations designed to further such co-ordinations; and, (5) efforts, other than by legislation, by the railroad companies themselves to meet highway competition by developments in their own enterprises.

It may be gathered from the data presented that, while the subject loosely termed "co-ordination" created a great hubbub in political circles back in 1929 and 1930, and the world-wide movement made rapid progress during the three or four years following, the whole question has currently reached a state of inactivity. It is the opinion of the authors that while much legislation has been enacted during the last five or six years "very little, if any, of it has proved to be effective in actual co-ordinating transport services." In other words, "co-ordination" (which was defined in the 52nd annual report of the Interstate Commerce Commission as describing "co-operative action in a common interest at particular places or with respect to particular matters, but without actual unification of companies") has not come to fruition on a national basis generally in the respective countries covered. However, certain local situations have been successful, which the report seeks to describe in full.

The chief section of the book is a review of legislation in each of 85 nations or political entities promulgated to co-ordinate railroad and highway transportation or to regulate the latter. The information imparted is copious, detailed, and up-to-date. In some cases a particular country receives but a few paragraphs. In others whole government decrees, acts and agreements are fully summarized, regulatory boards described in full and the results of legislation and administration frankly stated. Section two, dealing with the introduction of equipment by foreign railways to facilitate co-ordination or to meet competition, is classified under: (1) rail cars; (2) the road-rail vehicle and variants; (3) unit containers and container cars; and, (4) other railway equipment programs. Each head is further classified by countries. The third section deals briefly with other steps taken by railroads to meet competition from highway transportation. Subjects discussed include store-door delivery services, increased speeds, inauguration of railroad operated highway services, advertising, "tourism", and other customary expedients.

The report contains some 25 illustrations supplementing the text and six appendices containing reprints of international reports on transportation problems and particularly significant legislation in certain countries.

NEWS

$4.32 for An Hour At the Throttle

"Fortune" estimates wages for through passenger crews in article on N. Y. C.

Locomotive engineers earn an average of $4.32 per hour in running through New York-Chicago passenger trains on the stretch between Toledo, Ohio, and Elkhart, Ind., according to estimates in an extended article on the New York Central appearing in the November "Fortune". Based on timetable running time, the hourly wages on such trains between Chicago and Buffalo, N. Y., average $3.84 for engineers; $3.04 for firemen; $2.64 for conductors; $1.90 for brakemen; and $2.07 for baggagemen. The average for all six is $2.56.

"Fortune" states that last year the New York Central paid $46,012,500 to some 19,022 train and enginemen, or an average of $2,420 a year. He points out, however, that such an average does not give a clear indication of the wages received per unit of work performed, because of the dual basis of pay. Assuming a J-1 "Hudson" type locomotive on a main-line passenger train between New York and Chicago, carrying either mail or express, "Fortune" states that the following per-mile payments are made: engineer, 7.41 cents; fireman, 5.86 cents; conductor, 5.09 cents; two brakemen, 3.66 cents apiece; baggageman, 4 cents. Total wage cost for the train is quoted as 29.68 cents per mile and the total for the 960 miles between New York and Chicago as $284.93—earned by six men in a running time of from 16 to 22 hours.

"Fortune" also had something to say of the so-called full-crew law (called "excess" crew law by the Central management) requiring three brakemen on any train of more than 70 cars in the state of Indiana in describing a trip taken on a manifest freight between St. Louis, Mo., and De Witt yard, Syracuse, N. Y. It described the extra brakeman who rode through the state of Indiana as follows:

"Our extra man is a taciturn, handsome Hoosier with a bashful glance and worried mien. Shambling in and depositing himself on the softest cushion in the hack, he extracts an enormous toothpick from his vest pocket and proceeds to employ it with equable, methodical industry, while the conductor makes out his wheel report and the other brakeman chuckles over the funny papers. Four hours later, long after we have entered his native state, whose legislators have made possible his improving enterprise, his energy has not flagged and his determination is starched as ever; the toothpick is still exploring the interstices of his enormous molars and protruding cuspids, whose huge gold inlays are radiant in the slanting light of the morning sun. And at 11:15 a. m., when we have pulled into Brightwood (at Indianapolis), he arises languidly and shuffles to the door. Another hard day's work is done."

Roosevelt Revives St. Lawrence Ditch

President Roosevelt, at his biweekly press conference on October 27, said that he is reviving negotiations with Canada for the Great Lakes - St. Lawrence Waterways treaty. He also told his hearers that he was reorganizing the International Joint Commission so that the draft of the treaty could be taken off the shelf and dusted off.

The President, on October 28, appointed Robert B. McWhorter, chief engineer of the Federal Power Commission, as a member of the International Joint Commission, to succeed Eugene Lorton of Tulsa, Okla., resigned. Also, Governor John H. Bartlett of New Hampshire has resigned as a member of the Joint Commission, effective November 1.

New "400" Gets the Business

A total of 12,186 passengers in and out of Chicago are reported for the new "400" of the Chicago & North Western for the period from its inauguration on September 24 to October 23. For the same period a year ago, the old "400" carried a total of 8,047 persons. Because of the demand by North Shore patrons, a regular daily stop at Evanston, Ill., has been added to the schedule.

Baggage Agents Elect

The American Association of General Baggage Agents, which held a three day session at Philadelphia, Pa., October 24 to 26, inclusive, elected the following officers: President, A. A. Brown, general baggage agent, Pennsylvania; Vice-President, O. A. Roedell, general baggage agent, Minneapolis, St. Paul & Sault Ste. Marie; Secretary-Treasurer, E. P. Soebbing, general agent mail, baggage and express traffic, Wabash. Mr. Brown succeeds L. M. Whitehead, manager mail, baggage and express traffic, Chicago, Burlington & Quincy.

C. & O. Public Relations Meeting

Top-flight publicists advise railroaders how to win friends for carriers

More than 500 delegates and guests attended the Chesapeake & Ohio's ninth annual Public Relations Conference held under the direction of C. & O. Vice-President H. P. Henshaw at the Greenbrier Hotel, White Sulphur Springs, W. Va., on October 27 and 28. The necessity for making good public relations the "way of life" of every individual employee might be called the dominant theme of the sessions at which several speakers recommended such an approach as the most effective way for industry—particularly "big business"—to meet its present-day social responsibilities.

Among the speakers was Governor Homer A. Holt of West Virginia whose address of welcome, coming after the invocation by L. G. Bentley, C. & O. general safety agent, was followed by a response from Jefferson E. Davis, C. & O. yardmaster at Newport News, Va. Other addresses at the October 27 session were delivered by George D. Brooke, president of the C. & O., Pere Marquette and Nickel Plate; Arthur W. Page, vice-president of the American Telephone & Telegraph Company; D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen; and Bronson Batchelor, public relations counsel of New York.

Merle Thorpe, editor and publisher of Nation's Business, was the speaker at the banquet held on the evening of the 27th; while the October 28 program included addresses by J. M. Fitzgerald, vice-chairman of Committee on Public Relations of the Eastern Railroads; George A. Kelly, vice-president of the Pullman Company; Kinsey N. Merritt, general sales manager for the Railway Express Agency; G. K. Roper, senior secretary, Transportation Department, National Council of Y. M. C. A.'s and Judge R. V. Fletcher, vice-president and general counsel of the Association of American Railroads.

Among the guests introduced by Mr. Henshaw were: D. A. Crawford, president of the Pullman Company; Norman Call, president of the Richmond, Fredericksburg & Potomac; and W. J. Jenks, president of the Norfolk & Western. Herbert Fitzpatrick, chairman of the C. & O. board, broke in on the October

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9 Months N. O. I. Was $355,009,889

1.91 per cent return compares with 1.10 per cent in same period of 1938

Class I railroads of the United States in the first nine months of 1939 had a net railway operating income of $355,009,889 which was at the annual rate of return of 1.91 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first nine months of 1938 their net railway operating income was $205,444,845 or 1.10 per cent on their property investment, and in the first nine months of 1930, was $648,115,287 or 3.44 per cent. Class I roads in September, had a net of $86,435,178 or 2.90 per cent compared with $50,406,298 or 1.69 per cent in September, 1938, and $102,852,390 or 3.39 per cent in September, 1930.

CLASS I RAILROADS—UNITED STATES

Month of September

	1939	1938	1930
Total operating revenues	$381,117,880	$322,542,835	$462,209,448
Total operating expenses	251,166,938	231,982,737	316,494,334
Taxes	32,724,108	29,317,395	31,238,205
Net railway operating income	86,435,178	50,406,298	102,852,390
Operating ratio—per cent	65.90	71.92	68.47
Rate of return on property investment—per cent	2.90	1.69	3.39

Nine Months Ended September 30

	1939	1938	1930
Total operating revenues	$2,862,079,851	$2,573,535,021	$4,035,083,343
Total operating expenses	2,141,494,825	2,015,316,611	3,018,212,919
Taxes	266,677,012	255,413,710	271,435,608
Net railway operating income	355,009,889	205,444,845	648,115,287
Operating ratio—per cent	74.82	78.31	74.80
Rate of return on property investment—per cent	1.91	1.10	3.44

Gross operating revenues for the first nine months of 1939 totaled $2,862,079,851 compared with $2,573,535,021 for the same period in 1938, and $4,035,083,343 for the same period in 1930, an increase of 11.2 per cent in 1939 above 1938, but 29.1 per cent below 1930. Operating expenses amounted to $2,141,494,825, compared with $2,015,316,611 for the same period in 1938, and $3,018,212,919 for the same period in 1930. Operating expenses for the first nine months of 1939 were 6.3 per cent above the same period in 1938, but twenty-nine per cent below 1930.

Class I roads in the first nine months paid $266,677,012 in taxes, compared with $255,413,710 in the same period in 1938, and $271,435,608 in the same period in 1930. For the month of September alone, the tax bill amounted to $32,724,108, an increase of $3,406,713 or 11.6 per cent above September, 1938. Nineteen Class I roads failed to earn expenses and taxes in the first nine months of 1939, of which 7 were in the Eastern district, 5 in the Southern district, and 7 in the Western district.

Gross for September amounted to $381,117,880 compared with $322,542,835 in September, 1938, and $462,209,448 in September, 1930. Operating expenses in September totaled $251,166,938 compared with $231,982,737 in the same month in 1938, and $316,494,334 in September, 1930.

Class I roads in the Eastern district for the first nine months had a net of $201,730,138 or 2.25 per cent; for the same period in 1938, their net was $108,717,353 or 1.21 per cent while in 1930 it was $341,178,879 or 3.86 per cent. Gross in the Eastern district for the first nine months totaled $1,392,147,665 an increase of 15.5 per cent compared with 1938, but a decrease of 30.8 per cent compared with 1930. Operating expenses in the first nine months of this year totaled $1,010,297,041, an increase of 8.9 per cent above the same period in 1938, but a decrease of 32.4 per cent under the first nine months of 1930.

Class I roads in the Eastern district for September had a net of $45,423,364, compared with $22,377,749 in September, 1938, and $43,450,802 in September, 1930.

Class I roads in the Southern district for the first nine months had a net of $50,716,858 or 2.24 per cent; for the same period in 1938, their net amounted to $36,807,398 or 1.64 per cent, and for the same period in 1930 was $63,017,348 or 2.60 per cent. Gross in the Southern district for the first nine months amounted to $370,621,778, an increase of eight per cent compared with the same period in 1938, but a decrease of 24.6 per cent under the same period in 1930. Operating expenses in the first nine months of 1939 totaled $278,616,076, an increase of 4.7 per cent above the same period in 1938, but a decrease of 28.3 per cent under 1930.

Class I roads in the Southern district for the month of September had a net of $9,317,234, compared with $6,968,035 in September, 1938, and $8,827,060 in September, 1930.

Class I roads in the Western district for the first nine months had a net of $102,562,893 or 1.39 per cent; for the same period in 1938 those same roads had a net of $59,920,094, or 0.81 per cent, and for the same period in 1930 they had a net of $243,919,060 or 3.21 per cent. Gross in the Western district for the first nine months amounted to $1,099,310,408 an increase of 7.3 per cent above the same period in 1938, but a decrease of 28.3 per cent below the same period in 1930. Operating expenses in the first nine months of 1939 totaled $852,581,708, an increase of 3.8 per cent compared with the same period in 1938, but a decrease of 24.9 per cent under the same period in 1930.

For the month of September alone the Class I roads in the Western district had a net of $31,694,580 compared with $21,060,514 in September, 1938, and $50,574,528 in September, 1930.

Trainload Rates Ably Sponsored

Elmer Smith eloquently urges modern concept on I. C. C. —Oil lawyer discomfited

That at least one large American railroad is making a valiant attempt to regain some of the traffic lost to it in recent years because of the government-subsidized improvement of the Mississippi River became evident on October 28 when the Interstate Commerce Commission heard Elmer A. Smith, general attorney for the Illinois Central, defend the proposition that his company should be permitted to place in effect trainload rates on blackstrap molasses from New Orleans, La., to Peoria, Ill., and Pekin. During his 70-minute argument Mr. Smith discussed the whole subject of government subsidization of waterway transportation, and warned his hearers that the only way that the railroads could hope successfully to fight such transportation on the Mississippi was to be given enough leeway by the commission in the making of rates so that, as in the instant case, they could take advantage of large offerings of a commodity and offer trainload rates which would successfully compete with river barge operations.

In the course of his argument, Mr. Smith pleaded for greater elasticity in rate-making, saying that only in this way can the railroads survive. He decried what he termed "paper rates" and asserted that unless the railroads make rates which really bring in the revenue, regardless of what level they are fixed at, there is no hope for the industry. He admitted that the Illinois Central should have done something about rates in the 'Twenties when the barge traffic on the Mississippi first became large enough to cut into the road's revenues, but he contended that railroad "hasn't slept on its rights" because nothing has been done about reducing rates to meet barge competition until this time. His company, he insisted, proposes to do everything in its power to get the river traffic back on the rails, and the publication of trainload rates in this case is only one of the means that it intends to use.

The commission had granted oral argument in the case after it had earlier suspended tariffs filed by the Illinois Central and the Missouri Pacific publishing a rate of 14 cents per 100 lb. on blackstrap molasses when shipped in minimum quantities of 1,800 net tons in tank cars from New Orleans to Peoria and Pekin. The molasses would be shipped in trainload lots of at least 38 cars from New Orleans, La., to the Commercial Solvents Corporation, a large manufacturer of commercial alcohol, at Peoria and Pekin. At the present time the company has chartered a tow boat and barges on which it carries the molasses, but it has assured the I. C. that if a 14-cent rate is published, it will give up its own barge operations and permit the railroad to handle the traffic.

In arguing that the 14-cent rate should be permitted, Mr. Smith pointed out that

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Contract Trucks Under Control

I. C. C. finds it isn't checking up on these fellows, maybe, as much as it should

Disposing of applications of numerous truckers serving chain grocery stores, the Interstate Commerce Commission, Division 5, took occasion last week to discuss and construe section 209 of the Motor Carrier Act, asserting broad powers thereunder to prevent cut-throat competition by incorporating restrictions and limitations in permits authorizing operations as contract carriers. In the decision (No. MC-1898) the commission concluded "upon further consideration" that its previous pronouncements as to its authority did not fully reflect the meaning of certain language in section 209 which it now finds contemplates permit restrictions not only as to commodities, routes and territories, but also as to "all other essential characteristics of the service rendered by the carrier."

Meanwhile, the commission points out that "Because we have such power, it does not follow that we are required to include in each and every permit a rigid or technical formula for defining the transportation business covered thereby or the scope thereof. . . . As presently advised we are not prepared to change radically our present specifications in permits."

The proceeding grew out of "grandfather-clause" applications filed by contract truckers serving the Great Atlantic & Pacific Tea Company and new service applications filed by former drivers of the American Stores Company, which is withdrawing from the operation of its own trucking service. In view of the "vigorous protests" against the form of authority granted by so-called compliance orders entered by the commission covering certain of the applications, the commission stayed 84 such orders and set the proceeding for oral argument, stating that it would also hear argument on the broader question of restrictions in contract-carrier permits.

After reviewing the situation and the positions of the various parties in interest the commission made its above-mentioned assertion of broad power to impose restrictions. "The argument herein," it says, "presents a vivid picture of the struggle for competitive advantage, and possibly in some instances even survival, between motor contract carriers and common carriers. The common carrier is required to serve the general public within the limits of its facilities, at its published rates, without discrimination. . . . The contract carrier, on the other hand, may pick and choose the shippers to be served, and lawfully may discriminate in its service to them. . . . Obviously, the contract carrier in competing for certain classes of traffic with the common carrier, has a substantial advantage. . . . This competitive situation has existed in the motor carrier industry for some time and was within the knowledge of the Congress when the motor carrier law was enacted. Control of this situation clearly was contemplated."

Disposing of the specific cases the commission found that the former drivers for American Stores Company were entitled to permits to transport under contracts for persons "who operate retail stores, the business of which is the sale of food," specified commodities over irregular routes between all points in specified territories. Authority sought by each trucker to make emergency runs outside his territory was denied. The commission made no formal disposition of the "grandfather-clause" applications of the A. & P. truckers; they will be handled further informally, and the permits granted "will reflect our conclusions reached here. . . "

Chairman Eastman wrote a separate concurring opinion, setting forth with more emphasis than did the majority report the desirability of protecting common carriers from the disposition of contract carriers to poach upon the most profitable business. Commissioner Lee dissented, insisting that "there cannot be spelled out of the act any intention on the part of Congress that contract carriers should be hamstrung for the benefit of other carriers."

Suggestions for Open Annual Meetings of A. A. R.

Among the subjects coming before October 27's regular monthly meeting of the Association of American Railroads board of directors in Washington, D. C., was a suggestion that the Association's annual meetings be open to the public and the press. It is understood that the suggestion came forth in more or less impromptu fashion, and thus the matter did not receive formal consideration.

The author of the suggestion is reported to have pointed out that open-forum annual meetings are held by associations in many lines of business, such as banking, investment banking and insurance. Also, he is said to have cited in the same connection the practices of the American Short Line Railroad Association and American Trucking Associations, Inc., proceeding to ask: "Why not the A. A. R.?"

Johns-Manville President Receives Franklin Institute Medal

Lewis H. Brown, president, Johns-Manville Corporation, New York, will be awarded the W. M. Vermilye medal, "in recognition of outstanding contribution in the field of industrial management," by the Franklin Institute, Philadelphia, Pa., on November 14. The first recipient of the award, Mr. Brown has been president of Johns-Manville since 1929. His selection is based upon the report of an advisory committee which includes W. L. Batt, chairman, president of SKF Industries; C. E. Brinley, president, Baldwin Locomotive Works; and R. A. Wentworth, representing the American Society of Mechanical Engineers.

Auto Dealers Tell I.C.C. the Reason

New car sellers reveal their preferences in shipping agencies at hearing

I. C. C. Examiners Disque and Lawton heard testimony concerning the transportation of new automobiles on October 27 in Harrisburg, Pa., the second of four test destination points involved in docket No. 28190 (the case summarized on page 661 of last week's issue). A group of 13 representative dealers took the stand, of which 4 regularly received their automobiles all-rail; 2 by lake-truck; 1 by all-truck; 2 by lake-truck during open navigation and rail in winter; 3 by tow-bar or driveaway and 1 by lake-driveaway in summer and rail in winter.

Only two dealers did not themselves specify routing from factory or assembly plant. One, a Chevrolet dealer, with an annual volume of from 500 to 800 autos, ordinarily shipped by rail up to the end of 1936, and so specified in ordering from the manufacturer. Nevertheless, numbers of shipments came through by truck, on factory routing, and since that date he has not bothered to specify. **Although all of his shipments now come by truck, chiefly from Baltimore, Md., (75 mi.) he pays an arbitrary freight charge to the manufacturer which, he believes, is the railroad rate from Flint, Mich. (distance about 700 mi.).** He testified that the truck operator uses Chevrolet equipment. A Ford dealer declared that he had never expressed a preference. At present the manufacturer ships Fords by truck from Chester, Pa., Mercuries by truck from Detroit, Mich., and Lincolns and Lincoln-Zephyrs by rail. (The Lincolns are shipped in carload lots to Philadelphia and driven over the road to Harrisburg.) He testified that the manufacturer charges a flat-rate of $44 per Ford for freight and handling, regardless of routing.

The fact that Harrisburg is an important railroad center (Reading and Pennsylvania) was cited by two dealers as a deciding reason for specifying shipments all-rail. A Buick dealer, with an annual volume of 400 to 425 autos, wouldn't use any other form of transportation, regardless of promised savings, because he believes in *keeping the good-will of railroad employees.* He receives from both Flint (700 mi.) and Linden, N. J. (165 mi.) but **pays the factory, and charges the customers, a set rate on all autos, however shipped.** He testified that the recent railroad rate reduction on new automobiles had no effect on this charge.

A dealer in Cadillacs, La Salles and Oldsmobiles also ships all-rail because of the railroad employee factor. He testified, however, that he "never was particularly interested in receipt by truck, anyhow". A Packard dealer ships all-rail because "it makes a perfect set-up". He customarily stores shipments for a time, and since he has a private siding at his warehouse, receipt by rail is convenient. He unloads cars with his own employees, ordinarily using three men to do the job.

He declined solicitation by truck operators. A Pontiac dealer receives all-rail, but expressed no reason therefor. Personally, he desires the cheapest possible rate.

A Chrysler-Plymouth dealer receives approximately 60 per cent of his shipments by lake-truck in the open season and 40 per cent by railroad. He divides the latter 50-50 between the Reading and Pennsylvania, although he has a private siding on only one of the roads. His charge to the customer, he testified, does not change with the mode of shipment, although it costs from $8 to $10 per carload to unload autos shipped by rail. To get the summer business, over-all costs by rail would have to equal truck rates. He has sold some equipment to the truck operator which he patronizes.

A De Soto and Plymouth dealer who receives via lake-truck and truck would split his business between the carriers if the railroad offered storedoor delivery. He declared that the railroads have the edge in winter because of reliability. A Dodge and Plymouth wholesale and retail distributor, specifying truck and lake-truck routing, prefers those carriers principally because the rates are lower; he has no facilities or employees to unload railroad cars and the truck service is faster. He testified that he also can receive split deliveries by truck, which would necessitate an l. c. l. rate if routed via rail. He sells equipment to the trucking company.

The driveaway and two-bar method of shipment whereby automobiles are driven over the highways under their own power either singly or in pairs was cited by several dealers as a superior means of receiving shipments. A Hudson dealer (who has been in the automobile "game" since 1904) testified that customers prefer to have their auto partially broken in by the drive from the factory and that the dealer can watch performance thereby and make adjustments upon receipt. He receives by truck in winter and uses his own employees in tow-bar service the remainder of the year. *Speedometers are not connected during the drive.* A Graham dealer receives auto by lake to Cleveland, Ohio, and driveaway by his own employees beyond. A Willys dealer testified that shipment by rail costs $11.85 per auto more than by driveaway, which is the controlling factor in his choice of the latter. Speedometers are disconnected by the contractor who performs the over the road service. A Studebaker dealer receives about 70 per cent via rail and 30 per cent by driveaway from South Bend, Ind. He uses his own employees to perform the latter at a cost of about $25 per auto, generally when he requires shipments for quick delivery. He prefers railroad shipment.

A dozen or so District of Columbia distributors and dealers testified at the Washington hearing on October 30. Distributors for General Motors cars other than Pontiac are not permitted to specify the routing of shipments to them; the Pontiac representative, claiming the right to route, was receiving cars by truck, employing a trucker "recommended" by the Pontiac Company. Chrysler and Ford distributors also asserted their right to route, although one of the latter admitted that he never receives any cars except those brought in by one trucker. It was admitted generally that *the buyer of an automobile pays a transportation charge equivalent to the rail rate from the factory to the place of sale,* regardless of the method of transportation used in bringing in his car. There appeared to be only one exception to this rule—the distributor for Willys, whose cars are driven to him in pairs by the tow-bar method, charges his customers actual freight.

Buick cars come to Washington by rail, with the routing specified by the manufacturer. The distributor is billed for the rail freight rate from Flint, Mich., regardless of whether cars are shipped from that point or from Linden, N. J. If allowed to route this distributor would prefer to use trucks because he thinks they are cheaper; if the cost by rail and truck were the same, he would perhaps divide the business. He does not, however, believe in the driveaway method, feeling that a car thus transported "is not a new car and shouldn't be sold as such." Chevrolets are trucked to Washington from a Baltimore, Md., assembly plant, and the distributor, with no right to route, pays a transportation charge equivalent to the rail rate from Flint. The distributor for Cadillac, LaSalle and Oldsmobile said he gets "most all" by rail and his unloading cost averages about $1 per car. He is "perfectly satisfied" with the railroad service, and with the arrangement whereby the manufacturers control the routing. The above-mentioned Pontiac distributor who uses the trucker "recommended" by the manufacturer prefers the highway carriers because of the low cost and service; he insisted that he could have rail deliveries if he wished.

Distributors of the Chrysler cars, controlling the routing, prefer the trucking service mainly because of its lower "overall" cost of delivery to their doors. The Chrysler-Plymouth distributor uses a lake-truck service, involving a lake movement from the factory to Buffalo, N. Y., during the season of open navigation on the Great Lakes; in the winter he uses an all-highway service. He would try the rails if the over-all cost was the same as by truck, although there are other things he likes about the truckers, such as their *promptness in settling loss and damage claims.* Another witness—the De Soto-Plymouth distributor—also liked that feature of trucking service; truckers, he said, don't question claims, whereas with the railroads "there's various and sundry correspondence." This De Soto-Plymouth distributor brings his cars in over an all-truck route, as does the Dodge-Plymouth distributor who thinks so well of the trucking service that he would continue to use it unless the cost by rail were "substantially less." Asked why some dealers in his distribution territory received cars direct by rail, the witness thought that the volume involved in each individual case was perhaps so small as to make the business "unattractive" to the truckers, who had perhaps not solicited such dealers.

Studebaker cars are driven into Washington from South Bend, the dealer feeling that the "slight" use is offset by the "breaking in" they get. The men employed to do the driving are guaranteed a monthly wage of $75 and earn about $20 a week on the average. The witness did not know how many hours a day the men worked, nor whether or not the operating complied with the I. C. C. hours-of-service rules. As noted above, the Willys dealer uses the tow-bar method of transportation, giving the buyer the benefit of any savings in transportation costs. Speedometers are not connected while cars are being driven in, and the method of delivery to the dealer is not mentioned unless a customer brings it up. Then the situation is "explained"—and with apparent success, for the witness went on to say that no sales resistance was encountered because of the drive-away practice.

Among other witnesses appearing in Washington were Packard and Hudson dealers, the former using the rails because of unsatisfactory service from trucks. Hudsons going into the pool which the manufacturer maintains in Washington for the convenience of dealers come in by rail because the warehousing arrangements make such handling the most expedient. Hudsons received directly by the dealer who testified come in by truck and driveaway, most of the latter being taxicabs. Also, there was the testimony of the Nash dealer whose cars are driven in by the tow-bar method, and the truck-using Ford-Lincoln-Mercury dealer who hasn't received a car by rail in 10 years.

Following the auto distributors and dealers with testimony which concluded the Washington hearing was W. L. Vail, division freight agent for the Chesapeake & Ohio. He reported on investigations he had made in Richmond, Va., and Lynchburg as to the reasons why automobile dealers ship by highway. Storedoor service was in his opinion the most important factor, although he listed also the lower overall cost of receiving cars by truck and the fact that autos trucked in usually have

Col. Henry and Pettengill to Debate Government Ownership Nov. 15

A debate on the topic "Resolved: That the Federal Government Should Own And Operate the Railroads" will be broadcast over the blue network of the National Broadcasting Company, on November 15, from 2 to 3 p. m. (e. s. t.). Col. Robert S. Henry, assistant to president, Association of American Railroads, and former Congressman Samuel B. Pettengill, author of the so-called long-and-short-haul bill, will take the negative; Norman Thomas, Socialist lecturer and writer and Dr. Harry W. Laidler, executive secretary, League for Industrial Democracy, will take the affirmative.

The debate is to be held chiefly as a demonstration for more than 100,000 college students and countless more high school students who are debating this year the question of government ownership of the carriers.

more equipment in place, thus facilitating the "make-ready" for sale. Also, Mr. Vail reported on his observations of the unloading of automobiles from box cars equipped with loaders.

Parkes to Address Railroad Fans

Holcombe Parkes, associate director of public relations, Association of American Railroads, and editor of the Norfolk & Western Magazine, will address the Railroadians of America at their next meeting on November 10 at the Knickerbocker building, New York. His talk will cover the organization and accomplishments of the association.

Substituted Freight Service

The Interstate Commerce Commission has further extended from October 26 until November 2 the time within which railroads are required to file common-carrier motor vehicle applications with respect to their substituted freight service. The commission's decision in this Ex Parte 129 proceeding was reviewed in the *Railway Age* of August 19, page 292.

Western Railway Club

The Western Railway Club of Chicago will consolidate its January and February meetings in a meeting to be held in St. Paul, Minn., on Friday evening, February 2, 1940, coincident with the St. Paul Winter Sports Carnival. A special train will leave Chicago about 10 o'clock Friday morning, February 2, arriving in St. Paul in time for a reception, banquet and visit to the Ice Palace. The special train will leave St. Paul Saturday night on the return trip for Chicago.

F. E. C. to Call Streamliner the "Henry M. Flagler"

The Florida East Coast will honor its builder and Florida's pioneer promoter by placing the name of Henry M. Flagler on its new stainless-steel streamliner to go in service between Jacksonville and Miami early in December. Now nearing completion at the plant of the Edward G. Budd Manufacturing Company, the new train consists of 7 lightweight stainless steel cars to be operated by Diesel-electric power.

Private Truck Owners to Meet in New York November 27

The year-old National Council of Private Motor Truck Owners, Inc., which claims to represent the owners of some 1,500,000 motor trucks in industry and agriculture, will hold its annual meeting at Pennsylvania hotel, New York, November 27. The council is seeking in particular to prevent the placing of private operations under jurisdiction of the Interstate Commerce Commission, alleging that such a move is an unnecessary duplication of existing state regulation.

Eight Millionth Zephyr-Mile Recorded November 5

The eight millionth Zephyr mile will be recorded at 8:12 a. m. on November 5, when the eastbound Denver Zephyr passes a point east of Belmont, Ill. To commemorate the completion of eight million miles by the nine Diesel electric Zephyrs of the Chicago, Burlington & Quincy since the first one was placed in service on November 11, 1934, the Denver Zephyr will "ease through" a large circle of paper, on which will be printed in letters six feet high "Eight Millionth Zephyr-Mile."

Texas Commission Eliminates Differential

The Railroad Commission of Texas has issued an order which abolishes all freight rate differentials in Texas, effective November 20. Generally, differential territory is that part of Texas west of Midland on the Texas & Pacific, west and south of San Angelo on the Panhandle and Santa Fe, west of San Antonio to El Paso and Kerrville on the Texas & New Orleans, south of Devine on the International Great Northern, west of Pleasanton Junction on the San Antonio, Uvalde & Gulf, south of Mathis on the Texas & New Orleans, west of Corpus Christi and south of Odom on the St. Louis, Brownsville & Mexico, and also certain branch lines or portions of lines of the Panhandle and Santa Fe, the Fort Worth & Denver City and the Chicago, Rock Island & Gulf in the west Texas and Panhandle sections.

Interviews Broadcast from Penn Station

The first of a series of informal inquiring microphone broadcasts of Station WINS was held on November 1 in the waiting room of Pennsylvania station, New York. Presented at 5 p. m. daily except Sundays, the series consists of 15-minute programs presented under the name "A Penny For Your Thoughts," directed by Fred Webbe and Dorothy Castel, who interview passers-by on such matters as their travels, their reasons for being in Pennsylvania station and other items of popular interest. The series will continue from Pennsylvania station until Christmas.

Denver Rocket to Operate on 19-hr. Schedule

The Rocky Mountain Rocket, which the Chicago, Rock Island & Pacific will place in service between Chicago and Denver, Colo., on November 12, will operate on a schedule of 19 hours eastbound and 19½ hours westbound for the 1,084 miles. The train will leave Chicago at 1:55 p. m. and will arrive in Denver at 8:25 a. m. the next morning, mountain time, and at Colorado Springs at 8:30 a. m. Eastbound, the train will leave Denver at 1:15 p. m., mountain time, and Colorado Springs at 1:05 p. m., and will arrive in Chicago at 9:15 a. m., central time, the next morning.

Club Meetings

The Northwest Car Men's Association will hold its next meeting on November 6 at the Midway Club, St. Paul, Minn. H. L. Heater, vice-president in charge of engineering, American Steel Foundries, Chicago, will present a paper entitled "Freight Car Truck Design and Construction."

The Central Railway Club of Buffalo will hold its next meeting on November 9 at the Hotel Statler, Buffalo, N. Y. T. V. Buckwalter, vice-president, Timken Roller Bearing Company, Canton, Ohio, will present a paper entitled "Steam Locomotive Slipping Tests." The Central Railway Club Chorus will entertain.

The Toronto Railway Club will hold its next meeting on November 20 at the Royal York Hotel, Toronto, Ont., a paper entitled "Electric Welding and Shop Practice" will be presented by Harry Thomason, Canadian Westinghouse Company, Hamilton, Ont.

The American Institute of Electrical Engineers will hold a transportation group meeting November 9 in the Engineering Societies building, New York. H. A. Rose, engineering department, Westinghouse Electric & Manufacturing Co., and G. R. McDonald, transportation department, General Electric Company, will present illustrated talks on "Single Anode Rectifiers for Railway Power Supply," with particular reference to the New York Central and the New York Independent Subway.

1939 Mechanical Division Letter Ballot Results

In Circular No. DV-969, issued under date of October 23, by the Association of American Railroads, Mechanical division, the results of the letter ballots on recommendations of various committees reporting to the session of the division at New York, June 28-30, 1939, are given in detail. A total of 74 individual propositions are involved. As a result of a favorable letter ballot all of these propositions to amend the standard and recommended practice of the division are approved effective March 1, 1940; with the exception of Proposition 4 (a) to 5 (c), inclusive, covering definitions and designating letters which are approved effective immediately; and with the further exception of Propositions 3, 6, 7, 23, 26, 27 and 28 to amend the interchange rules, and Propositions 29 to 74, inclusive, to amend the loading rules, these propositions being approved effective January 1, 1940.

Truckers Holler at Low Tire Rates by Railroad

Seven motor carrier conferences representing some 3,000 motor carriers operating in the territory east of the Rocky Mountains have asked the Interstate Commerce Commission to institute a general rate investigation of rates on rubber tires and related products. The petition points out that the railroads in this territory have either made or have proposed substantial reductions on these commodities.

The petition goes on to state that "Petitioners believe that any downward revision of rail rates will cause corresponding readjustments of rates of competing motor carriers, if they wish to retain their fair share of the traffic. It is the opinion of this group that the commission in dealing with this situation should have before it all the forms of transportation in the affected territory."

The motor carrier groups joining in the petition are as follows: Akron Motor Transportation Association; Middle Atlantic States Motor Carrier Conference, Inc.;

Southern Motor Carriers Rate Conference, Inc., of Atlanta, Ga.; Central and Southern Motor Freight Association of Louisville, Ky.; Western Trunk Line Motor Common Carriers of Des Moines, Iowa; Middle Western Motor Freight Rate Tariff Bureau of Kansas City, Mo.; and the Southwestern Motor Tariff Bureau of Dallas, Tex.

An accompanying petition asked the commission to suspend those tariffs now on file which would reduce railroad rates on rubber tires and related articles in the eastern part of the United States.

Brooke Elected to A. A. R. Board of Directors

The board of directors of the Association of American Railroads held its regular monthly meeting in Washington, D. C., on October 27 and elected G. D. Brooke, president of the Chesapeake & Ohio, a member of the board to succeed Charles E. Denney, who has recently resigned as co-trustee of the Erie to become president of the Northern Pacific.

President J. J. Pelley told the group that the railroads as a whole have already reduced their bad-order freight cars by 42,000, since the repair program was inaugurated several weeks ago. This work, it was explained, is exclusive of normal repairs on other equipment from time to time.

The board voted to continue for another year the Association's claims bureau for handling all claims on fresh fruits and vegetables that have been settled in an amount exceeding $20.

It was decided that the annual member roads meeting would be held in Chicago on November 10.

A. S. M. E. Paper to Cover High-Speed Lightweight Trains

High-Speed Lightweight Trains will be the subject of a paper which will be presented by C. T. Ripley, chief engineer, Technical Board, Wrought Steel Wheel Industry, at a meeting of the Metropolitan Section of the American Society of Mechanical Engineers which will be held at the Engineering Societies building, 29 West Thirty-Ninth street, New York, on Tuesday evening, November 21, at 7:30 p. m. Mr. Ripley's paper was prepared as the American contribution to the railway session of the British-American Engineering Congress which would have been held at New York early in September had it not been for the war developments in Europe which led to the cancellation of the congress. It deals with the development of lightweight passenger rolling stock and even more extensively with motive-power developments and their implications. Roy V. Wright, managing editor, *Railway Age*, will be **chairman of the meeting.**

Roads Agree to Pay Part of N. J. Taxes

The attorney-general of New Jersey has indicated that he would agree to a 30-day postponement from November 2 for his application for a summary judgment for $9,240,196 in back taxes and more than $7,000,000 in penalties against railroads which withheld state levies for 1932 and 1933. His decision rests upon announcement by counsel for the carriers that they would make approximate part payment as follows: New York Central, $580,000, covering principal in full for 1933; Reading, $160,000, outstanding principal in full; Delaware, Lackawanna & Western, $1,000,000, about 60 per cent of back principal for 1933; Lehigh Valley, $900,000, half of outstanding principal; and Erie, $450,000, half of outstanding principal. The Central of New Jersey, whose bankruptcy petition appears elsewhere in this issue, was granted an injunction on November 1 by Federal Judge Fake restraining the state from enforcing tax claims on its property of $3,979,185 principal and $3,250,425 penalties included in the prospective summary judgment pending action in reorganization proceedings. He signed a similar order protecting the Northern of New Jersey, now operated by the Erie, but in separate reorganization in the federal courts.

Truck Loadings Hit New High in September

Stimulated by improved business conditions, movement of revenue freight by motor trucks reached a new peak in September, according to the monthly survey prepared by the American Trucking Associations, Inc. The survey, based on comparable reports received from 210 motor carriers in 39 states, revealed that truck loadings in September were heavier than in any single month since January, 1937, when computation of national averages was undertaken. September loadings were 6.5 per cent over August of this year, and 28.2 per cent above the figure for September a year ago.

The 210 reporting carriers transported 1,110,959 tons of freight last month, as against 1,043,332 tons in August and 886,334 tons in September, 1938. The September figures represent an increase of 43.6 per cent over the 1936 monthly average of the reporting carriers. The A. T. A. truck loadings index figure for September, 1939, computed by taking the 1936 monthly average to represent 100 per cent, was 143.56. This compared with an index figure of 126.02 for August of this year, and 106.84 for September, 1938.

Despite the fact that September tonnages are only representative of four weeks business as compared to five weeks in August, and that a few carriers reported decreases occasioned by unexpected suspension of operations due to labor troubles, the majority of haulers reporting increases attributed the improvement to a general upswing in business, according to A. T. A.

General merchandise, accounting for a little more than 76 per cent of the total tonnage reported for September, showed an increase of 8.6 per cent over the previous month, and a 29 per cent increase over September 1938.

Petroleum products represented 12 per cent of the total tonnage reported, while showing a 6.2 per cent decrease under August, 1939, reported increases of 22.4 per cent over September of last year.

Due largely to deliveries of new models, transportation of automobiles in September increased 55.0 per cent over the previous month. The current figure, however, was 134.8 per cent ahead of September, 1938, due to factory shutdowns during that month.

Movement of iron and steel showed increases of 29.3 per cent over August, and 51.3 per cent over the corresponding month last year. For the first time since January, 1938, traffic falling within this classification showed an increase over the 1936 monthly average, the increase being 5 per cent, according to the survey.

Included in the total tonnage reported were figures on special and seasonal movement of tobacco, textile products and household goods. These groups reported a decrease of 12 per cent under August and a 1.4 per cent increase above September, 1938.

Saginaw Fetes the Railroads

The blowing of all railroad and factory whistles at 8 a. m., October 12, called the 90,000 good people of Saginaw, Mich., to an all-day program of activities for the city's "Railroad Appreciation Day," the "football queen" of the Arthur Hill High School, garbed in an engineer's cover-alls, sounding off on a Pere Marquette whistle. Flags decorated the streets and lavish railroad exhibits in the windows of 11 large downtown stores drew throngs to the sidewalks. The New York Central placed two coaches from its new Mercury and a modern Pullman sleeper on public view all day; the Pere Marquette showed off one of its latest 1200-class freight locomotives and a luxurious caboose; while the Grand Trunk placed a scale model of its 6300-class locomotive in the lobby of the leading hotel.

At noon R. J. Bowman, vice-president, Pere Marquette, addressed the Kiwanis club; R. C. Vandercook, manager, Michigan Railroads Association, addressed the Optimist club, and H. P. Stacy, assistant general counsel, New York Central, at Detroit, addressed the Rotary Club. Wind-up of the day was a banquet in the City auditorium attended by 573 persons, including representatives of the A. A. R. and of Saginaw's three railroads, all five members of the state Public Service Commission and ranking railroad labor executives of the state. Special decoration was given by electrically-lighted trainmen's lanterns; a locomotive bell served in place of the toastmaster's gavel and the waitresses all wore engineers' caps. Col. Robert S. Henry, assistant to the president, A. A. R., was the principal speaker of the evening under the topic "Railroads Are Ready."

Freight Car Loading

Loading of revenue freight for the week ended October 28 totaled 834,096 cars, the Association of American Railroads announced on November 2. This was a decrease of 27,102 cars, or 3.1 per cent, below the preceding week, but an increase of 125,506 cars, or 17.7 per cent, above the corresponding week in 1938 and an increase of 66,072 cars, or 8.6 per cent above the same week in 1937.

As reported in last week's issue, the

loadings for the previous week ended October 21, totaled 861,198 cars, and the summary for that week as compiled by the Car Service Division, A.A.R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, October 21

Districts	1939	1938	1937
Eastern	172,782	141,317	156,831
Allegheny	172,645	123,777	144,420
Pocahontas	62,354	51,239	55,496
Southern	119,055	103,857	107,630
Northwestern	135,737	101,022	110,781
Central Western	138,639	129,567	133,969
Southwestern	59,986	54,505	61,029
Total Western Districts	334,362	285,094	305,779
Total All Roads	861,198	705,284	770,156
Commodities			
Grain and grain products	44,578	46,496	36,440
Live stock	21,581	21,305	22,383
Coal	169,813	127,625	157,045
Coke	11,622	5,722	8,688
Forest products	39,231	32,446	32,734
Ore	62,533	28,064	38,044
Merchandise l.c.l.	160,299	159,438	169,054
Miscellaneous	351,541	284,188	305,768
October 21	861,198	705,284	770,156
October 14	844,955	726,142	806,095
October 7	834,694	702,616	812,258
September 30	834,640	696,908	843,861
September 23	814,828	669,704	836,885
Cumulative Total, 42 Weeks	26,966,514	24,273,197	31,534,459

In Canada.—Carloadings in Canada in the week ended October 21 totaled 62,345, compared with 60,079 in the previous week and 62,095 in the corresponding week last year, according to the weekly statement of the Dominion Bureau of Statistics. Light loading of western grain due to accumulations at elevators was an important factor in the week's loading, the decrease in grain in the western division being 1,392 cars from the previous week and 4,799 cars from last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Oct. 21, 1939	62,345	28,682
Oct. 14, 1939	60,079	27,864
Oct. 7, 1939	68,594	28,607
Oct. 22, 1938	62,095	22,930
Cumulative Totals for Canada:		
Oct. 21, 1939	2,021,491	942,099
Oct. 22, 1938	1,967,156	853,911
Oct. 23, 1937	2,128,905	1,115,368

The Canadian Roads Nine Months' Earnings

Increase of $3,643,203 was reported by the Canadian National in net operating revenue of $6,304,642 for September, compared with $2,661,439 in the corresponding period a year ago. Operating revenues showed an increase of $4,795,674 to $22,645,303 from $17,849,629. Operating expenses advanced $1,152,471 to $16,340,661 from $15,188,190.

For nine months ended September 30, operating revenues increased $11,908,503 to $142,245,937 from $130,337,434 and operating expenses were up $2,800,895 to $135,593,583 from $132,792,688. Net operating revenue totaled $6,652,354 compared with net deficit of $2,455,254.

September net operating revenue of $5,821,955, compared with $3,651,406 in the same month last year, was reported by the Canadian Pacific. Gross for the month was higher than 1938 by $3,538,536, while operating expenses were $1,367,987 above those of September, 1938.

For the nine months ended September 30 the company's operating net showed an increase of $5,374,616 over the corresponding period of last year. Gross was up $5,098,287, while operating expenses were reduced $276,328.

Nazis Soaked for Black Tom Blow-Up

Germany has been formally assessed $50,000,000 for damages resulting from explosions at Black Tom, N. J., and Kingsland during the World War. The disasters, which occurred in 1916 and 1917, destroyed the Lehigh Valley's terminal and a plant of the Canadian Car & Foundry Co. Announcement of the award was made by Supreme Court Justice Owen J. Roberts as umpire of the German-American Mixed Claims Commission.

Due to the fact that Germany has protested the validity of the award, it would appear that the 153 claimants would probably receive no more than the $26,000,000 which Germany has on deposit in the United States Treasury. The principal claimants and the awards were as follows: Lehigh Valley, $9,900,322; agency of the Canadian Car & Foundry Company, $5,871,105; and the Bethlehem Steel Company, $1,886,491.

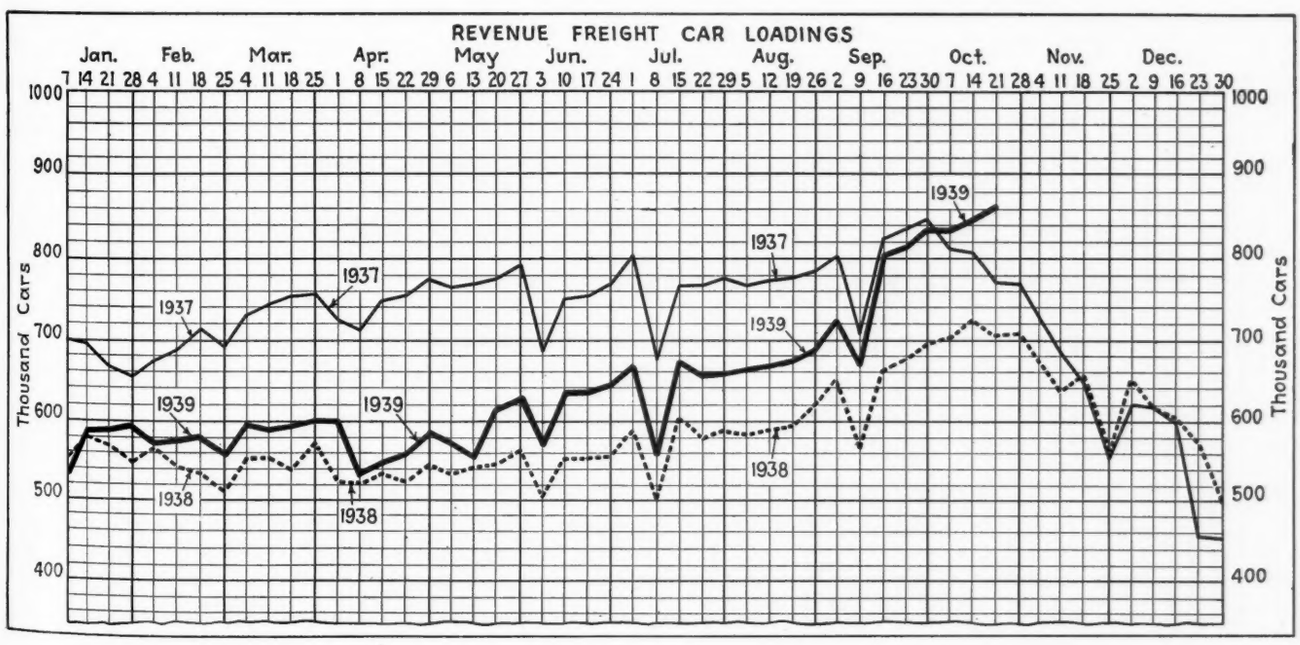
Northwest Carmen Elect Officers

At the annual meeting of the Northwest Carmen's Association, held at the North Central Club, St. Paul, Minn., on October 2, an unusually large and representative group of members was present to listen to the committee reports, enjoy the clever and extensive entertainment program provided and elect officers for the ensuing year. A total of 433 members and guests of the association registered for the meeting and much pleasure was expressed at the secretary's report of 161 new members since the September meeting and the treasurer's statement of a cash balance on October 1, 1939, of over $1,400.

The report of the Nominating Committee was accepted and, by a single unanimous ballot, the following officers were elected for next year: President, F. M. Washburn, car foreman, C. M. St. P. & P., Minneapolis, Minn.; first vice-president, J. M. Ryan, master car builder, C. St. P. M. & O., Hudson, Wis.; second vice-president, G. A. Thomson, car foreman, N. P., St. Paul, Minn.; third vice-president, L. R. Kassick, general foreman freight cars, M. St. P. & S. S. M., Minneapolis, Minn.; secretary, E. M. Myers, chief interchange inspector, Minnesota Transfer, St. Paul, Minn.; treasurer, G. R. Johnson, chief clerk to master car builder, N. P., St. Paul, Minn.

Bill Crawford Heads Magazine Editors

W. A. Crawford, editor of the Central of Georgia Magazine, was elected president of the American Railway Magazine Editors' Association at that organization's Fall meeting held October 27 and 28 at the Greenbrier Hotel, White Sulphur



Springs, W. Va. Mr. Crawford will succeed T. B. O'Meara, editor of the Chesapeake & Ohio Lines Magazine, whose term expires December 31.

Other officers elected are: First vice-president—H. Robertson, managing editor of the Illinois Central Magazine; second vice-president—J. L. James, assistant editor of the Louisville & Nashville Magazine; secretary-treasurer—M. W. Jones, assistant editor of the Baltimore & Ohio Magazine, who was re-elected. Among other events on the program was the presentation to Mr. Jones of a pin and scrap book of letters in recognition of his service to the association, the presentation being made by Martha Moore, editor of the Frisco Lines Magazine. Retiring President O'Meara was also presented with a pin, this presentation being made by Walter Johnson, editor of the M-K-T magazine.

Aside from this brief business session on October 27, the program for the editors meeting contemplated the attendance of their members at the meetings of the Chesapeake & Ohio's ninth annual Public Relations Conference, held at the Greenbrier at the same time, as noted elsewhere in this issue.

"Grand Circle" Fares Extended Until October 31, 1940

"So popular were the sensationally low 'grand-circle' railroad fares" which were in effect during the two World's Fairs that they will be continued to October 31, 1940, J. J. Pelley, president of the Association of American Railroads, announced on October 31.

The success of this travel plan surpassed all expectations, Mr. Pelley said, and this prompted the railroads to extend the "greatly reduced fares for another year. For $90, an individual can travel by coach from any point in the United States to either New York City or Francisco, then across the continent to the other city and back to the starting point, without retracing routes. Stop-over privileges, giving tourists full opportunity to visit points of interest such as the National Parks and the nation's famous resorts, are allowed in both directions. First-class tickets for a grand-circle tour cost but $135 plus special Pullman rates of $45 for a lower berth and $34.50 for an upper.

Experience since the low fares went into effect has shown that circle tours of more than 10,000 miles can be made at these low rates, Mr. Pelley pointed out. The scope of the tickets, he adds, provides what might appropriately be called "Grand Circle Tours of North America."

Traffic Clubs to Meet in Chicago November 6 to 8

The eighteenth annual convention of the Associated Traffic Clubs of America will be held in the Palmer House, Chicago, on November 6 to 8. The program includes a number of speakers, among whom are Fitzgerald Hall, president of the Nashville, Chattanooga & St. Louis; Charles S. Dewey, former assistant secretary of the U. S. Treasury; John S. Burchmore, counsel for the National Industrial Traffic League; Jack Garrett Scott, chief attorney for the Bureau of Motor Carriers of the Interstate Commerce Commission; and Raymond J. Kelly, national commander of the American Legion. The program is as follows:

November 6

12:15, Testimonial luncheon sponsored by the transportation committee of the Chicago Association of Commerce, Speaker, Fitzgerald Hall.

November 7

9:30, Address of welcome by J. P. Haynes, executive vice-president of the Chicago Association of Commerce.
Report of board of directors.
Address by Charles S. Dewey.
Address by John S. Burchmore.
2:00, Reports of committees.
Address by Jack Garrett Scott.
Election of officers.
6:30, Annual dinner.
Speaker, Raymond J. Kelly.

November 8

9:30, Introduction of new officers.
Reports of traffic club activities.
Awards to individuals for distinguished and meritorious service in the field of traffic club educational activities.
12:00 noon, Luncheon for chairmen of education committees.
2:00, Report of special committee on the proposed establishment of a national institute of traffic management.

Carl R. Gray, Jr., Talks at National Safety Congress

Carl R. Gray, Jr., executive vice-president, Chicago, St. Paul, Minneapolis & Omaha, presented the opening address of the steam railroad section at the National Safety Congress and Exposition at Atlantic City, N. J., on October 17, the program of which was summarized in last week's *Railway Age*. It was the speaker's opinion that the railroads have passed through the trial-and-error period of safety technique; that they now know what is required, and that the safety program for the future must emphasize obedience to, and concurrence in, tried and tested rules of behavior.

He also declared that there are a great many considerations which do not relate to the subject of safety directly but which have a great effect on the accident record. One of the most important of these, in his opinion, is the state of forgetfulness and carelessness in employees brought about by undesirable environment and condition of home life. He cited sickness in the family, debts of the household, incompatability and failure to achieve household organization, as factors which affect employees behavior and consequent casualties. He also pointed to health as of primarily importance and urged that employees be accorded systematic and competent physical examinations. While most railroad employees consider such physical examinations as of benefit, others hold that the railroad has no right to examine them. It was the speaker's thought that the latter position is rapidly giving way.

Sixtieth Annual A. S. M. E. Meeting to Be Held at Philadelphia

The usefulness of the mechanical-engineering profession is to be stressed at the sixtieth annual meeting of the American Society of Mechanical Engineers to be held at the Bellevue-Stratford Hotel, Philadelphia, Pa., December 4-8. This meeting at Philadelphia will be the first annual gathering of the society to be conducted outside of New York City since 1890 and the first national meeting in Philadelphia since 1887. Ninety-seven papers will be presented at the 33 technical sessions. Of particular interest to railroad men will be the following:

Monday, December 4

8 p. m.

Machine Shop Practice

A New Method of Machine-Tool Spindle Analysis, by Thomas Barish
Machine Design and Motion Economy—Building Motion Economy into Machine Tools, by O. W. Habel and G. G. Kearful

Tuesday, December 5

9 a. m.

Fuels

Which Fuel to Choose? by G. A. Anbro
Modern Methods of Fuel Purchasing, by R. G. Rincliffe

2:30 p. m.

Fuels

Characteristics of Cloth Filters on Coal-Dust Air Mixtures, by A. R. Mumford, A. A. Markson, and T. Ravese
Defining Equitable Limits of Dust Emission from Stacks, by P. H. Hardie

Wednesday, December 6

9:30 a. m.

Education and Training

Education and Training of Apprentices for the Aeronautical Industry, by Victor W. Page
Apprentice Training, by Ray E. Ellis
Apprenticeship in the Machine-Tool Industry, by Elmer H. Neff

Lubrication (I)

The Influence of Crystal Size on the Wear Properties of High-Lead Bearing Metal, by John R. Connelly
Temperature Distribution in Bearings, by E. S. Pearce

2:30 p. m.

Lubrication (II)

Boundary Film Investigation, by S. J. Needs
Properties and Performance of Plastic Bearing Materials, by L. M. Tichvinsky

6:30 p. m.

Banquet and honors

Thursday, December 7

9:30 a. m.

Railroad

Railway-Car Engineering, by D. S. Ellis
Whip Stress in a Locomotive Main-Rod at 100 M.P.H., by M. W. Davidson (by title)
Progress in Railway Mechanical Engineering, 1938-1939

Mechanical Springs

Calculation of the Elastic Curve of a Helical Compression Spring, by H. C. Keysor
Helix Warping in Helical Compression Springs, by D. H. Pletta and F. J. Maher
Progress Report—Fatigue Tests of Helical Compression Springs at Wright Field, by C. T. Edgerton
Progress Report on Book on Strength of Metals, by D. J. McAdam, Jr.

Thermodynamics

A Rational Representation of the Flow Performance of Reaction Steam-Turbine Blading, by Adolf Egli
The Viscosity of Superheated Steam, by G. A. Hawkins, H. L. Solberg, and A. A. Potter
Report on Change of Enthalpy of Steam with Pressure at Low Temperatures, by F. G. Keyes

2:30 p. m.

Steam Generators

Steam Boiler Performance and a Method of Comparison, by E. G. Bailey
The Locomotive Boiler, by C. A. Brandt

P. & S. Division Selects Committees

Following a recent meeting of its general committee, the Purchasing and Stores division, A. A. R., of which A. C. Mann, vice-president, Illinois Central, is chairman, has announced the subjects to be studied by committees this year and the personnel of each committee. Seventeen committees have been assigned to prepare reports. An advisory committee, consisting of the past chairmen of the Division, has been reappointed, with E. A. Clifford, general purchasing agent, C. & N. W. as

chairman, a special purchasing committee has been reappointed, with L. L. White, vice-president, Erie, as chairman, and the committees in charge of regional meetings have been reorganized. The subject committees and their personnel follow:

Purchasing and Stores Manual: P. L. Grammer, assistant purchasing agent, Penna., chairman; W. E. Brady, stores accountant, A. T. & S. F.; W. R. Culver, superintendent of stores, C. & O.; W. S. Morehead, general storekeeper, I. C.; J. C. Kirk, assistant purchasing agent, C R. I. & P., chairman ex-officio.

Material Classification: E. G. Roberts, general storekeeper, C. R. I. & P., chairman; E. F. Chubb, general material supervisor, Penna.; J. J. Kukis, division storekeeper, Erie; J. K. McCann, inspector of stores, C. B. & Q.; F. J. McMahon, general storekeeper, N. Y. C.; W. S. Raich, chief clerk to general storekeeper, A. T. & S. F.; C. H. Thompson, assistant general storekeeper, S. P.; C. L. Wakeman, general storekeeper, Wabash, chairman ex-officio.

Railroad Scrap: R. E. Hamilton, supervisor reclamation, C. & O., chairman; C. B. Brenton, chief clerk, purchasing department, W. Md.; A. N. Crenshaw, assistant purchasing agent, G. N.; W. B. Gordon, superintendent of reclamation, C. N.; E. W. Hurley, division storekeeper, D. & R. G. W.; R. R. Kane, division storekeeper, L. & N.; F. C. Newman, storekeeper, Southern; W. J. Sidey, supervisor scrap and reclamation, L. V.; L. L. Studer, district storekeeper, Mo. Pac.; C. J. Vanderbosch, district storekeeper, B. & O.; L. B. Wood, general storekeeper, T. & N. O.; G. M. Wright, supt. scrap and reclamation, N. Y. C.; J. C. Kirk, assistant purchasing agent, C. R. I. & P., chairman ex-officio.

General Reclamation (Joint with Mechanical and Engineering Divisions): E. R. Casey, superintendent of reclamation, Union Pacific, chairman; J. J. Collins, supervisor scrap and reclamation, Erie; T. S. Edgell, division storekeeper, M. & O.; T. J. Hegeman, supt. scrap and reclamation, C. B. & Q.; A. L. Prentice, manager, scrap and reclamation, N. Y. C.; W. P. Stewart, supervisor scrap and reclamation, I. C.; Peter Young, supervisor of reclamation, A. T. & S. F.; E. W. Peterson, general storekeeper, Bang. & Aroos.; J. C. Kirk, assistant purchasing agent, C. R. I. & P., chairman ex-officio.

Material Records—Pricing-Inventory: C. K. Reasor, assistant manager of stores, Erie, chairman; M. E. Baile, assistant supply agent, Mo. Pac.; E. J. Becker, assistant general storekeeper, S. P.; V. N. Dawson, assistant general storekeeper, B. & O.; E. H. Landers, general storekeeper, C. C. C. & St. L.; C. B. Neubauer, assistant to vice president, Southern; A. H. Nohrn, general clerk, stores department, A. T. & S. F.; J. F. Riddle, analyst, stores department, Penna.; J. W. Watkins, traveling storekeeper, L. V.; W. L. Wheeler, assistant general storekeeper, C. & N. W.; O. A. Donagan, general storekeeper, B. & M., chairman ex-officio.

Forest Products: J. E. McNelley, chief tie and lumber supervisor, A. C. L., chairman; G. B. Campbell, tie and timber agent, Mo. Pac.; E. J. Clark, chief lumber inspector, C. B. & Q.; S. M. Elder, lumber agent, B. & O.; D. R. Elmore, assistant to general manager, Fruit Growers Express; L. W. Kistler, superintendent treating plants, St. L.-S. F.; J. R. McGrenera, general tie and timber inspector, A. T. & S. F.; E. H. Polk, assistant purchasing agent, S P.; G. H. Robison, purchasing agent, Union Pacific; F. A. Schack, fuel and timber agent, G. N.; James Young, assistant purchasing agent, Penna.; C. C. Warne, purchasing agent, N. Y. C., chairman ex-officio.

Fuel: P. A. Hollar, fuel purchasing agent, Penna, chairman; E. S. Bonnet, fuel purchasing agent, N. Y. C.; E. A. Busk, assistant to general purchasing agent, C. & N. W.; Robert Collett, fuel agent, St. L.-S.F.; A. E. Johnson, fuel agent, C. M. St. P. & P.; G. E. Lyman, assistant to vice president, I. C.; M. H. McGlynn, fuel agent, C. R. I. & P.; J. E. May, fuel agent, B. & O.; C. E. Smith, vice president, N. Y. N. H. & H., chairman ex-officio.

Purchasing Department Practices: W. A. Clem, purchasing agent, Reading, chairman; J. P. Blum, assistant purchasing agent, C. B. & Q.; H. C. Currier, assistant to purchasing agent, N. Y. C.; James Deery, assistant purchasing agent, Penna.; C. S. Douglass, assistant to purchasing agent, N. & W.; E. L. Fries, general purchasing agent Union Pacific; C. C. Hubbell, general purchasing agent, D. L. & W.; W. R. H. Mau, purchasing agent, I.-G. N.; H. P. Millar, chief clerk, purchasing department, C. P.; M. C. Nystrom, assistant purchasing agent, S. P.; S. R. Secor, assistant purchasing agent, C. & O.; E. J. Lamneck, purchasing agent, Penna., chairman ex-officio.

Stationery and Printing: B. B. Melgaard, assistant to purchasing agent, C. M. St. P. & P., chairman; H. Carter, general stationery storekeeper, N. Y. C.; H. C. Dawson, stationery storekeeper, M. & O.; J. L. Gorsuch, stationer, W. Md.; W. W. Griswold, stationer, C. R. I. & P.; G. W. Kendall, stationery buyer, A. T. & S. F.; E. H. Nicodemus, stationery storekeeper, Penna.; E. Osborn, stationery storekeeper, D. & H.; G. E. Perrot, stationery supervisor, S. A. L.; J. T. Van Horn, stationer, Mo. Pac.; G. A. Goerner, general storekeeper, C. B. & Q., chairman ex-officio.

Handling Facilities: W. F. Redman, traveling storekeeper, C. & N. W., chairman; B. T. Adams, district storekeeper, I. C.; B. B. Kemmerling, assistant to stores manager, Penna.; A. B. Lackey, division storekeeper, Southern; A. S. McKelligon, general storekeeper, S. P.; J. V. Miller, assistant general storekeeper, C. M. St. P. & P.; W. H. Morris, general storekeeper, Reading; W. M. Robertson, district storekeeper, C. & E. I.; J. W. Wade, general storekeeper, N. & W.; S. P. Warmack, general storekeeper, I.-G.N.; G. M. Betterton, purchasing agent, S. P., chairman ex-officio.

Simplification and Standardization: A. G. Follette, general material supervisor, Penna., chairman; G. W. Alexander, general storekeeper, Cnt. of Ga.; J. C. Baker, division storekeeper, Southern; M. B. Bowman, general storekeeper, N. Y. C. & St. L.; L. E. Field, supervisor material standards, B. & M.; S. A. Hayden, assistant purchasing agent, M-K-T.; W. M. Hinkey, supervisor of materials, B. & O.; H. C. Ralls, supervisor of materials, Mo. Pac.; C. H. Shuart, traveling storekeeper, A. T. & S. F.; L. C. Thomson, manager of stores, C. N.; W. W. Williams, chief of requisition bureau, N. Y. C.; E. W. Walther, general storekeeper, B. & O., chairman ex-officio.

Supplies for Dining Cars: I. F. McAlpine, assistant purchasing agent, C. B. & Q., chairman; S. L. Bouque, assistant to general storekeeper, S. P.; W. E. Erickson, commissary, hotel and news service agent, G. N.; A. F. Free, disbursement accounts assistant, accounting division, A. A. R.; J. L. Irish, assistant general storekeeper, Union Pacific; H. N. Mellor, commissary buyer, Penna.; T. K. Russell, assistant to dining service superintendent, I. C.; L. P. Krampf, supply agent, Mo. Pac., chairman ex-officio.

Engineering Materials: G. D. Tombs, division storekeeper, I. C., chairman; John Carmichael, superintendent of stores, W. Md.; C. B. Chapman, storekeeper, Southern; V. E. Elliott, storekeeper, N. & W.; R. C. Harris, general storekeeper, Penna.; J. A. King, division storekeeper, C. & N. W.; C. E. Reasoner, assistant district storekeeper, M-K-T.; C. B. Tobey, general storekeeper, L. V.; W. C. Wilson, division storekeeper, P. M.; W. W. Kelly, general purchasing agent, A. T. & S. F., chairman ex-officio.

Standard Packages: F. S. Austin, assistant purchasing agent, N. Y. C., chairman; D. E. Cain, assistant chief clerk, stores department, A. T. & S. F.; J. F. Duffy, purchasing department, Erie; J. W. Hagerty, office manager, purchasing department, Penna.; E. H. Hughes, purchasing agent, K. C. S.; L. L. King, purchasing agent, I. C.; H. A. Lockhart, supervisor of materials, B. & O.; H. M. Rainie, purchasing agent, B. & M.; T. E. Sullivan, electrical storekeeper, C. & N. W.; C. E. Swanson, traveling storekeeper, C. B. & Q.; C. H. Murrin, general storekeeper, L. & N., chairman ex-officio.

Stores Practices and Records: J. S. Genther, general storekeeper, L. & N. E., chairman; H. J. Blum, assistant general storekeeper, M-K-T.; E. A. Carlson, general storekeeper, P. M; D. E. Dawson, traveling storekeeper, G. M. & N.; B. M. Jarvis, division storekeeper, Southern; F. J. McNulty, chief clerk to vice president, B. & M.; F. M. Reardon, division storekeeper, D. & H.; G. J. Zimbleman, division storekeeper, C. B. & Q.; A. L. Sorensen, manager of stores, Erie, chairman ex-officio.

Marking Tools, Materials, Etc.: W. H. Lloyd, division storekeeper, C. R. I. & P., chairman; C. D. Baldwin, purchasing agent, Bang. & Aroos.; L. F. Duvall, assistant general storekeeper, A. C. L.; T. A. Hodges, general storekeeper, S. A. L.; A. M. Lemay, inspector of stores, C. M. St. P. & P.; C. A. Nichols, assistant general storekeeper, N. P.; J. L. Ouarles, general storekeeper, C. & O.; A. A. Taylor, assistant general purchasing agent, Mo. Pac.; W. R. Culver, superintendent of stores, C. & O., chairman ex-officio.

Loss and Damage: J. T. Kelly, general storekeeper, C. M. St. P. & P., chairman; L. J. Ahlering, purchasing and stores agent, C. & E. I.; Henry Hansen, assistant purchasing agent, N. P.; J. H. James, purchasing agent, P. & L. E.; J. U. King, general storekeeper, A. C. L.; J. R. Watt, general purchasing agent, L. & N.; P. E. Welch, assistant general storekeeper, T. & N. O.; C. B. Wright, general storekeeper, G. T. W.; E. A. Clifford, general purchasing agent, C. & N. W., chairman ex-officio.

Regional Committees: Purchasing. Eastern—C. C. Warne, purchasing agent, N. Y. C.; Southern—H. E. Warren, manager purchases and stores, G. M. & N.; Western—W. W. Kelly, general purchasing agent, A. T. & S. F.; Southwestern—J. H. Lauderdale, general purchasing agent, Mo. Pac.; Far Western—G. M. Betterton, purchasing agent, S. P.; *Stores.* Eastern—W. R. Culver, superintendent of stores, C. & O.; Southern—C. H. Murrin, general storekeeper, L. & N.; Western—I. T. Kelly, general storekeeper, C. M. St. P. & P.; Southwestern—C. L. Wakeman, general storekeeper, Wabash; Far Western—U. K. Hall, general storekeeper, Union Pacific.

C. & O. Public Relations Meeting

(*Continued from page 713*)

27 program to offer a resolution in memory of the late Frank M. Whittaker, who died recently in Seattle, Wash., having retired July 1, 1937, from the C. & O. traffic vice-presidency after more than 50 years of service with the road.

In making his address of welcome, Governor Holt, who remained through the October 27 session, extended his remarks to speak briefly of the value of railroads in the national economy, and particularly their many-sided value to the communities they serve. In fact, he said, he does not know what might happen without the railroads; he hasn't been in government service "too long to appreciate the value of a good taxpayer."

President Brooke's talk was a discussion of the general transportation problem. It is important, he said, for all railroad public relations representatives to have some sound ideas and accurate concepts of that broad question. Also, he discussed current favorable business conditions, referring to the prevailing conjecture as to the effect thereon of an early armistice or peace in Europe. "Be that as it may," Mr. Brooke asserted in the latter connection, "we must face the fact that any prosperity founded upon war is unsound." Meanwhile, he added, the country must not be permitted to lose sight of the railroad industry's basic difficulties, calling for continuing work toward the establishment of "a national transportation policy based upon fundamental fairness and equality of regulation."

Vice-President Page of the A. T. & T. defined good public relations as "getting on with one's neighbors." He conceded that the larger the enterprise the more difficult it is to keep the public's confidence, but he nevertheless asserted that suspicion of big business is not inevitable. In the latter connection he cited the Bank of England, a private enterprise "run so completely in the public interest as to arouse no suspicion." He went on to tell about A. T. & T. public relations work, stemming in recent years from the statement of policy made by its president at the 1927 meeting of the National Association of Railroad and Utilities Commissioners. In Mr. Page's opinion **90 per cent of public relations depends upon what an industry does, and only 10 per cent on what it says.** He added, however, that the 10 per cent is nevertheless an "important thing," continuing to warn that "anyone in a business can sell his livelihood down the river—what the rank and file do is the large part of public relations." And to make public relations effective "everyone must be in on the secret;" all employees "must know the reasons for the policies if they are going to interpret them to the public." If employees understand the company's policies, it is Mr. Page's opinion that they are thereby equipped to take responsibilities in

unusual situations; "you can't write specifications for every situation—good public relations is not a gesture, it's a way of life." Adjusting big business to a democracy, the A. T. & T. vice-president concluded, must contemplate operating "with good humor, good will and politeness."

President Robertson of the B. of L. F. & E. asserted that in his opinion it is no longer "wise nor intelligent for railroads to hide their light under a bushel." He was encouraged to note how the carriers are making themselves ready for any emergency or traffic rise, and he doesn't think railroad labor will be "found wanting." Labor's differences of opinion with management on wages and other matters, he went on, should not interfere with the cooperation so essential in the current endeavor to make effective the committee-of-six recommendations calling for a transport set-up embracing a fair field for all agencies and special favors to none.

Mr. Batchelor viewed good individual-company public relations as a "living force" permeating the daily activity of every official and employee. On the broader front he thinks that business in general must make itself articulate and rebuild a leadership that can win public confidence. "The scope of public relations," he said, "has been broadened, and the horizon of public relations activities must be extended to include attention to economic and political developments which might vitally affect all business." From there Mr. Batchelor went on to criticize government restrictions on industry's freedom and to deplore the adverse effect of the antitrust laws on any effort to develop real business leadership. In the latter connection he said: "If the full resources of an industry are to be applied to solving current economic problems, it can only be done by an industry free to consult and agree upon a program." At another point Mr. Batchelor predicted that involvement of the United States in war would bring rigid governmental control of industry. "Railroads," he said, "would be taken over—let there be no illusion on that."

Speaking at the banquet Mr. Thorpe discussed the multiplication of regulatory bodies in Washington where the government "is working hard to encompass every activity of every citizen from his birth to his death." In his opinion business management must be given freedom if the country expects to realize the 80-to-100 billion dollar annual income "we should have." The country, he added, has been "a long way from home" for 10 years, having started its wanderings "before the New Deal was born." But Mr. Thorpe has hopes; he catches "a note of homesickness for the old American way of doing things."

Mr. Fitzgerald spoke on "National Welfare and the Railroads." If the people of the country want efficient and well-managed railroads, he said, "they have them today," and all public relations representatives "should keep a headlight focused on that fact." Discussing "The Discipline of Responsibility," Vice-President Kelly of the Pullman Company warned that business must examine its conscience to see that it is discharging its public responsibilities. "It is the primary function of public relations," he went on, "intelligently to relate the private interests of investors to the broader background of public responsibility;" and in this connection "each employee must accept responsibilities commensurate with his individual job."

General Sales Manager Merritt of the Express Agency likened a business organization to a symphony orchestra, pointing out how each requires "perfect co-ordination" of the work of individual performers to produce respectively a satisfactory service and a great symphony. All employees, he went on, play a part in any well-rounded public relations program, adding, however, that special efforts must be made by those workers at the "hot-point of business"—where the customer meets the service. These employees in particular must know how to put the public relations rules to work "easily and sub-consciously." He added that because self-consciousness "will ruin any public relations work," a successful program requires that "our thoughts be on the customer." In Mr. Merritt's opinion there is "no great secret" to a good public relations program. It should have four broad planks: A good product; an understanding on the part of employees of that product; a house kept in order; and an interpretation of the service in the light of the public's concept.

Mr. Roper talked on "This America of Ours," while Judge Fletcher explained in highlight fashion the general transportation legislation pending before Congress in the Senate and House versions of S. 2009. He expects the conferees on this measure to begin their meetings about December 10. On the afternoon of October 28 a short session was held for staff members of the Chesapeake & Ohio Lines Magazines.

Trainload Rates Ably Sponsored

(*Continued from page 714*)

the trainload shipment would reduce the switching cost per unit. He also pointed out that the shipments would move on one bill of lading with the result that the clerical work would be reduced.

Meeting the argument that the proposed rates would be unremunerative, the I. C. counsel said that after a thorough cost study by the company's statisticians, it was determined that after deducting all expenses some 2½ cents would be left to pay ad valorem taxes and give a return on investment. This, he asserted, would mean a profit of some $885 per train, but in reality, he believed the company would have a greater return than this figure because it did not take into consideration the fact that a large part of the expense of maintaining the railroad must go on all the time and would not be increased because of this increased business which the road is entirely capable of handling.

Mr. Smith next discussed the objection raised by those who protested the new rate that the commission had always in the past frowned upon any trainload rates because they would tend to foster the large, as contrasted with the small, producer. In Mr. Smith's opinion, the prohibition against trainload rates has not "one whit" stopped big business from obtaining a lower rate for its shipments. **"Big business will move its traffic in large quantities at low rates, and the question before you here is whether or not we are going to have a chance to get the business,"** asserted the I. C. counsel. He then observed that in the past when the commission had struck down trainload rates, there had been no conditions in the tariffs that the commodity must all move at one time in trainload quantities. Rather, the rates heretofore prohibited by the commission, according to Mr. Smith, were those where a large shipper was to be given a lower rate simply because he happened to ship or receive in large quantities over a period of a year instead of in one particular shipment.

After disposing of the technical objections to the proposed rate, Mr. Smith discussed some of the broad general questions relating to the "railroad problem". He referred to the recent writings and editorials of Samuel O. Dunn, editor of *Railway Age*, who, he said, had repeatedly questioned the advisability of the government supporting either directly or indirectly other forms of transportation when it was well understood that regardless of the state of development of these other forms, the railroads would always be called upon in a time of emergency to carry the bulk of the freight tonnage of the country. He closed this phase of his argument by observing that "you can't starve the railroads and expect them to carry the traffic when they are needed". He then referred to the present business upturn when the carriers have been called upon by the government and business to buy a large amount of new equipment and repair the old despite the fact that for almost the past decade they have hardly had sufficient income to meet their operating expenses.

The first attorney to appear in opposition to the trainload rates was T. H. Brent, who told the commission that he represented the Mississippi River Carriers' Association. Mr. Brent characterized the record as "very lacking in essential facts regarding water transportation". He accused the railroad of making this rate for the Commercial Solvents Corporation. He then asserted that it is now costing this corporation 17 cents a hundred pounds to haul its molasses from New Orleans, to Peoria and Pekin, by its own barges. He could not understand how the railroad could haul the commodity for 14 cents and even make expenses, let alone a profit.

Although Mr. Brent's group was not directly interested in this case because of the fact that the Commercial Solvents Corporation is handling its own shipments by water, yet he insisted that the proposed rail rate was illegal and would break down the waterway rate structure on the Mississippi. He also cited what he termed was the commission's fixed policy against trainload rates and asked it to refuse to permit the Illinois Central to put them into effect.

The concluding objector to the new rates

was the Shell Oil Company, who was represented by Charles Wager. Mr. Wager explained at the outset that his company was not directly concerned with the case either, but that it appeared to protest the principle of trainload rates since it would hurt the small shipper and would destroy the rate structure on both the rails and the waterway in this territory.

The mention of the new rates hurting the little producer was the signal for a withering broadside of questions fired at the lawyer for Shell first by Commissioner Aitchison and then by Commissioner Mahaffie and Chairman Eastman. Commissioner Aitchison first asked the attorney just how his company fixed its price on oil and gasoline; whether when it hauled its oil up the river by barge and its competitors hauled theirs by rail, it charged a lower rate for its products because of the lower barge rate or whether it charged the rail rate and pocketed the difference between the rail and barge rate. The only answer that the attorney would give was that the price at destination was determined by competitive conditions. What these were he did not explain. He did admit, however, that **his company used the rail rate to determine its price instead of the barge rate.**

Commissioner Mahaffie asked the witness whether his company operated any pipe lines. "Yes, they did". "Well", Mr. Mahaffie queried, "don't you make quantity rates for pipe lines"? **"Yes", Mr. Wager replied, "We do make quantity rates on our crude pipe line".**

"Don't you think that would tend to hurt the small shipper of oil?" the commissioner insisted. There was no answer to this obviously inconsistent position on the part of the oil company. Later, the attorney tried to get himself out of this predicament by saying that the oil industry was a "very complex" one.

Chairman Eastman wanted to know whether the attorney had been asked to defend small shippers in this case. He had not; he was only defending his own company, who often had to make small shipments. After a series of questions, Commissioner Mahaffie got the counsel to admit that his company required a minimum tender of 50,000 barrels of crude oil before it would transport it in its pipe line.

In the course of a line of questioning seemingly calculated to soften the impact of the Aitchison-Mahaffie-Eastman barrage, Commissioner Alldredge asked whether, in the case of pipe lines the only tender one could have would be large quantities. Mr. Wager agreed that this was the case. Previously Commissioner Alldredge had so directed his questioning as to try to get both Mr. Smith and Mr. Brent to admit that after the molasses had moved by a low trainload rate to its destination it could be reshipped at a higher rate, thus making the total rate lower and breaking down the waterway and rail rates structures. The commissioner feared that the Commercial Solvents Corporation would become a distributing agency for the Illinois territory instead of using the molasses for its own manufacturing needs.

Further criticizing the proposed rates, Mr. Wager called them "quantity discounts" and urged that it would not be good policy to permit them when such a law as the Robinson-Patman Act is on the statute books. He explained to the commission that the Robinson Patman Act prohibits quantity discounts, but Commissioner Mahaffie corrected him by observing that it did so only when there was no difference in competitive conditions. In this case Commissioner Mahaffie did not think the Act would apply because there were certain competitive conditions present which, in his opinion, might justify the granting of a lower rate on trainload quantities in view of the water competition.

Commissioner Rogers wanted to know whether Mr. Wager had any objection to trying the new rates on an experimental basis for a year's time. Mr. Wager did not like this idea because he thought it would be an opening wedge which would permit the railroads to break down the rate structure.

"If it is a good thing", interposed Commissioner Aitchison, "why shouldn't it be an opening wedge in the rate structure?"

In a five-minute rebuttal, Mr. Smith asked the commission, "Has the time come when we should be regulated to protect our competitors who are unregulated?" He reiterated his earlier statement that only by the commission granting the railroads a wider latitude in their rate making powers could they hope to cope with their subsidized competitors. His concluding statement caused a smile to spread over the faces of the 10 commissioners when he borrowed a couplet from Coleridge's "Rhyme of the Ancient Mariner" to characterize the Shell counsel's argument as "idle as a painted ship upon a painted ocean".

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., 327 S. La Salle St., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, June 4-6, 1940, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 19-20, 1940.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C., I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION, J. M. Hurley, N. Y. O. & W. Ry., Middletown, N. Y. Next meeting, December 8-9, 1939, Netherland Plaza Hotel, Cincinnati, Ohio.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Tower Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y. Annual meeting, December 4-8, 1939, Bellevue-Stratford Hotel, Philadelphia, Pa.
Railroad Division—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, January 23-25, 1940, Hotel Coronado, St. Louis, Mo.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.
- Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington, D. C.
- Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
  - Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
  - Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
  - Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y.
  - Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
  - Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
  - Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
  - Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y.
  - Telegraph and Telephone Section. — W. A. Fairbanks, 30 Vesey St., New York, N. Y.
- Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.
  - Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.
  - Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.
  - Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
- Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
  - Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill.
- Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.
- Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
- Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.
- Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.
- Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
  - Accounting Division. — E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1940, White Sulphur Springs, W. Va.
  - Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C.
- Traffic Department. — A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 15-17, 1940, Providence Biltmore Hotel, Providence, R. I.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB. — C. R. Crook, 4468 Oxford Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, Mo.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Reg-

ular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION (See Locomotive Maintenance Officers' Association).

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—J. E. Goodwin, Shop Superintendent, Missouri Pacific R. R. Co., No. Little Rock, (P. O. Little Rock), Ark.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, December 10-12, 1940, Miami Fla.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit in connection with A. R. E. A. Convention, March 11-14, 1940, International Amphitheatre, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y. Annual dinner, December 7, 1939.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Los Angeles.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual dinner, November 9, 1939, Hotel Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—(See Association of American Railroads.—Fire Protection and Insurance Section.)

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo. Annual meeting, May 21-22, 1940, Brown Hotel, Louisville, Ky.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga. Next meeting, January 25, 1940, Chattanooga, Tenn.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y.

WESTERN RAILWAY CLUB.—W. L. Fox (Executive Secretary), Room 822, 310 South Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

October Orders Show High Level

Equipment buying below Sept. records but relatively high; rail month greatest since '29

Domestic equipment orders were placed during the month of October for 34 locomotives (5 steam and 29 Diesel-electric), 11,220 freight cars and 28 passenger-train cars. While totals in the locomotive and freight car categories show considerable decreases below the 52 and 24,231 units, respectively, of these types of equipment ordered in September, the October volume is, nevertheless, a relatively high monthly record compared with the last ten years. The passenger-train car total is a substantial increase over the 3 cars purchased in September.

The 34 locomotives ordered during the month bring the total for the year thus far to 247 units. This total is considerably in excess of the 228 locomotives ordered during the entire 12 months of 1938 and is exactly 90 per cent greater than the record for the first 10 months of that year. The number of locomotives ordered thus far in 1939 also exceeds the 12-months' total of each year from 1931 to 1935, inclusive.

The 11,220 freight cars ordered during October bring the total for the year thus far to 44,843 cars. This is more than 2½ times the total purchases for the entire 12 months of 1938 and 278 per cent greater than orders placed during the corresponding 10 months of that year. As was the case with the locomotive total it also exceeds each of the year totals from 1931 to 1935 inclusive. Orders for 28 passenger-train cars bring the total for the year thus far to 205 cars, which is about 73 per cent in excess of the 118 cars ordered during the corresponding period of 1938.

The carriers ordered 508,110 tons of rail

Domestic Equipment Orders Reported in Issues of The Railway Age in October, 1939

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
Oct. 14	St. Louis-San Francisco	5	Steam	Company Shops
Oct. 14	Chicago & North Western, Union Pacific, Southern Pacific	3	Diesel-electric	Electro-Motive Corp.
Oct. 14	Chicago & North Western, Union Pacific	3	Diesel-electric	Electro-Motive Corp.
Oct. 21	New York, New Haven & Hartford	10	Diesel-electric Sw.	American Locomotive Co.
Oct. 21	Illinois Central	10	Diesel-electric Sw.	Electro-Motive Corp.
Oct. 28	Ford Motor Co.	3	Diesel-electric Sw.	General Electric Co.

FREIGHT CARS

Oct. 7	Nevada Consolidated Copper Co.	30	Air-dump	Austin-Western
Oct. 7	Detroit, Toledo & Ironton	25	Cov. Hopper	American Car & Foundry
Oct. 14	Louisville & Nashville	600	Hopper	American Car & Foundry
		600	Hopper	Pullman-Standard
Oct. 14	Utah Copper Co.	100	Ore	Pressed Steel Car
Oct. 14	St. Louis Southwestern	100	Coal	Company Shops
		6	Flat	Company Shops
Oct. 14	Atchison, Topeka & Santa Fe	1,800	Box	Pullman-Standard
		450	Refrigerator	General American
		100	Flat	General American
		50	Gondola	General American
		200	Ballast	Rodger Ballast
		200	Gondola	American Car & Foundry
Oct. 21	New York, New Haven & Hartford	25	Caboose	Pullman-Standard
		250	Coal	Pullman-Standard
Oct. 21	Chicago Great Western	100	Flat	Pullman-Standard
Oct. 21	Chicago, Rock Island & Pacific	1,000	Box	Pressed Steel Car
Oct. 21	Great Northern	750	Ore	Pressed Steel Car
		750	Ore	Bethlehem Steel Co.
Oct. 21	Louisiana & Arkansas	200	Box	American Car & Foundry
Oct. 21	Lehigh & New England	75	Hopper	American Car & Foundry
Oct. 21	Seaboard Air Line	700	Box	Pullman-Standard
		100	Hopper	Bethlehem Steel Co.
		100	Flat	American Car & Foundry
Oct. 21	U. S. Navy Dept.	15	Flat	American Car & Foundry
		8	Box	American Car & Foundry
		8	Gondola	American Car & Foundry
		1	Hopper	American Car & Foundry
Oct. 28	Maine Central	10	Cov. Hopper	American Car & Foundry
Oct. 28	Inland Steel Co.	50	Gondola	General American
Oct. 28	Baltimore & Ohio	500	Gondola	American Car & Foundry
		1,000	Hopper	Bethlehem Steel Co.
Oct. 28	Northern Pacific	500	Box	American Car & Foundry
		150	Hopper	American Car & Foundry
		150	Hopper	General American
		500	Box	Pullman-Standard
Oct. 28	U. S. Navy Dept.	17	Flat	Haffner-Thrall Car Co.

PASSENGER-TRAIN CARS

Oct. 14	Chicago & North Western, Union Pacific, Southern Pacific	6	Pullman-Standard
Oct. 14	Pullman Company (C. & N. W.—U. P.—S. P.)	8	Pullman-Standard
Oct. 14	Chicago & North Western, Union Pacific	7	Pullman-Standard
Oct. 14	Pullman Company (C. & N. W.—U. P.)	7	Pullman-Standard

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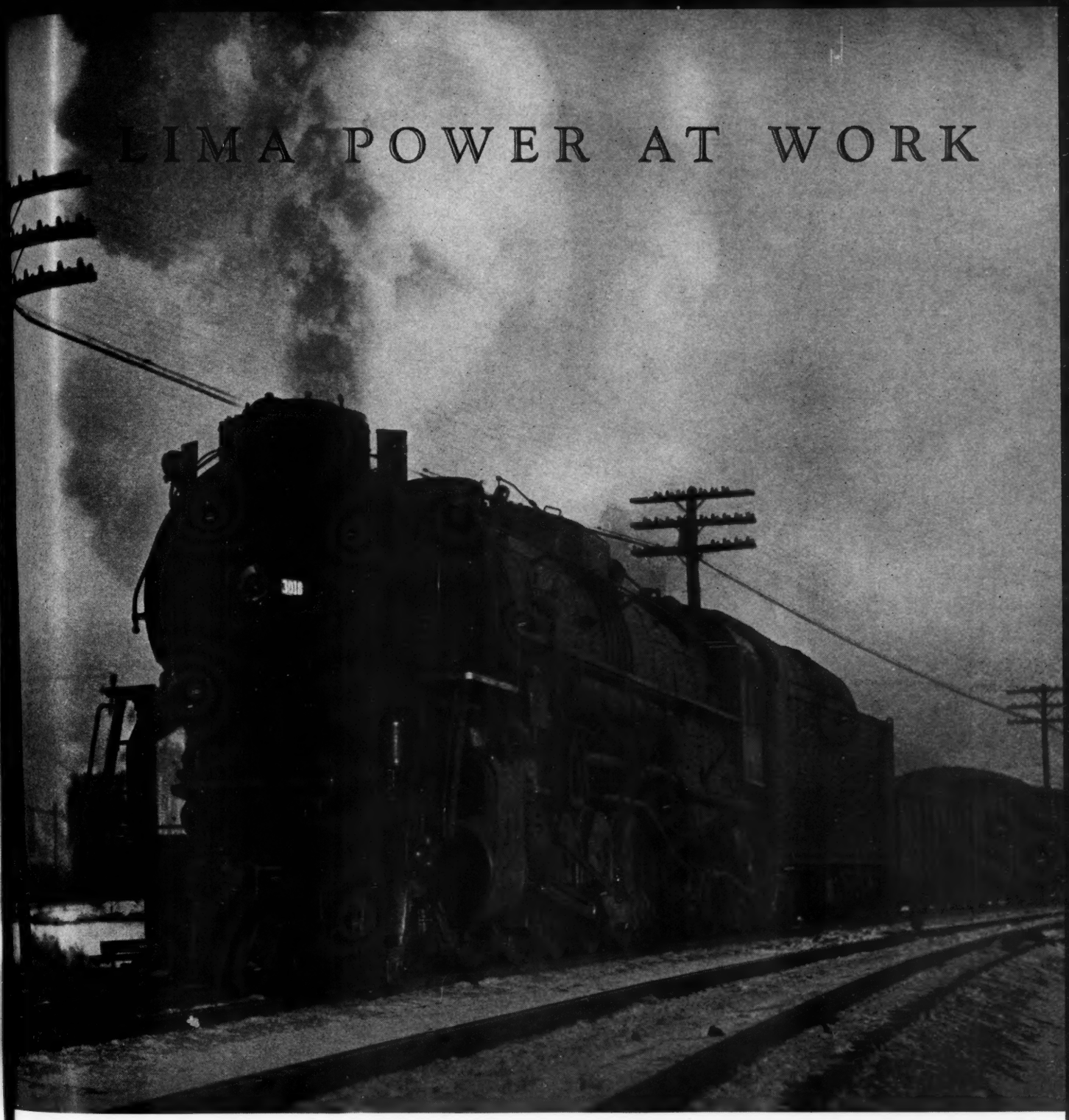

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YOU NEED NEW POWER NOW! » » » But Engines, well designed, well equipped and well built can not be decided overnight. » » » Before the need is so great that you can not give them the time they deserve, plan your new locomotives now.

LIMA LOCOMOTIVE WORKS, LIMA LOCOMOTIVE WORKS INCORPORATED INCORPORATED, LIMA, OHIO

during October, which is the greatest tonnage ordered in any single month since October, 1929. Orders placed during the month stipulate a tonnage almost as high as that ordered during the entire first half of the year and 45 per cent greater than that ordered during all 12 months of 1938. The month's purchases bring total orders for the year thus far to 1,229,847 tons, as compared with 230,115 tons ordered during the corresponding 10 months of 1938. This 10-months' total exceeds the 12-months' record for each year since 1929 with the exception of 1936, and it falls not far short of the 1,396,415 tons ordered in that year.

LOCOMOTIVES

THE CANADIAN NATIONAL has placed orders for 15 locomotives with the Montreal Locomotive Works, Ltd., and for 10 locomotives with the Canadian Locomotive Company, Ltd. See item in the *Railway Age* of September 23, page 456.

THE BOSTON & MAINE has ordered three 600-hp. Diesel-electric switching locomotives from the Electro-Motive Corporation and one 600-hp. Diesel-electric switching locomotive from the American Locomotive Company.

THE CANADIAN PACIFIC has placed orders for 12 locomotives with the Montreal Locomotive Works, Ltd., and 12 with the Canadian Locomotive Company, Ltd. Inquiry for this equipment was reported in the *Railway Age* of September 30, page 505.

FREIGHT CARS

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 27 steel ore cars of 80 tons' capacity.

THE TEXAS & PACIFIC has ordered 500 box cars of 50 tons' capacity from the Mt. Vernon Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of October 21, page 636.

THE TENNESSEE CENTRAL has ordered 65 steel hopper cars of 50 tons' capacity, from the American Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of October 14, page 604.

THE CHICAGO & ILLINOIS MIDLAND has ordered 50 hopper cars of 70 tons' capacity from the Pullman-Standard Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of September 30, page 505.

THE UNITED STATES WAR DEPARTMENT, CHIEF OF ENGINEERS, WASHINGTON, D. C., has ordered 125 tank cars from the American Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of October 7, page 540.

THE YOUNGSTOWN & NORTHERN has ordered 100 gondola cars of 70 tons' capacity from the Magor Car Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 23, page 457.

THE UNION RAILROAD COMPANY has placed orders for 60 air dump cars with the Differential Steel Car Company and 40 with the Magor Car Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 23, page 457.

THE LOUISIANA & ARKANSAS has ordered 100 steel box cars of 50-tons' capacity from the American Car & Foundry Co. This is in addition to the 200 cars ordered from the same builder reported in *Railway Age* of October 21.

THE ELGIN, JOLIET & EASTERN has ordered 600 center dump twin hopper cars 34 ft. 9 in. long of 50 tons' capacity and 50 covered hopper cars, from the American Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of September 23, page 457.

THE CANADIAN PACIFIC has placed orders for 1,300 freight cars including 200 refrigerator cars and 500 box cars with the National Steel Car Corporation, and 500 box cars and 100 automobile cars with the Canadian Car & Foundry Co. Inquiry for this equipment was reported in the *Railway Age* of September 30, page 505.

THE CANADIAN NATIONAL has placed orders for 3,265 freight cars, including 1,075 box cars to the Eastern Car Company, 590 box cars to the National Steel Car Corporation, and 1,100 box cars and 500 flat cars to the Canadian Car & Foundry Co. See item in the *Railway Age* of September 23, page 456.

THE NORTHERN PACIFIC has ordered 500 gondola cars from the Pressed Steel Car Company, 50 additional hopper cars and 100 Hart selective ballast cars of 70 tons' capacity from the American Car & Foundry Co., and 50 additional hopper cars from the General American Transportation Corporation. In the *Railway Age* of October 28, page 683, orders were previously reported for 1,300 cars making the total of recent orders for this road 2,000 cars.

THE BESSEMER & LAKE ERIE has placed orders for 2,050 freight cars divided as follows: To the Pullman-Standard Car Manufacturing Company, 1,000 hopper cars of 90 tons' capacity; Pressed Steel Car Company, 500 gondola cars of 50 tons' capacity; Greenville Steel Car Company, 500 box cars of 50 tons' capacity and to the American Car & Foundry Co., 50 covered hopper cars. Inquiry for this equipment was reported in the *Railway Age* of September 23, page 457.

THE BALTIMORE & OHIO has ordered 500 box cars from the Pressed Steel Car Company. This is in addition to the 1,500 cars ordered by this road and reported in the *Railway Age* of October 28, page 683. The Baltimore & Ohio is now turning out from its repair shops more than 200 freight cars per day, in addition to the normal repairs made to cars that are in service. With the upturn in business during the summer, the B. & O. laid out a program to cover the repair of 13,000 of its bad-order cars and also 360 locomotives. During September, 3,000 furloughed men were called back to the shops to handle these repairs, and many more have since been added. It is expected that this repair program will continue at least until the end of the year.

PASSENGER CARS

THE CANADIAN PACIFIC has placed orders for 10 mail and express cars with the National Steel Car Corporation. Inquiry for this equipment was reported in the *Railway Age* of September 30, page 505.

Supply Trade

Terry Fisher has been appointed in charge of the Northern Indiana territory with headquarters at South Bend, Ind., for **Cutler-Hammer, Inc.,** Milwaukee, Wis.

Henry D. Rolph, who has been with the **Yale & Towne Manufacturing Company** for over 30 years, and much of the time has been engaged in traveling abroad in connection with its export business, has been appointed director of export sales, with headquarters in the Chrysler building, New York City.

OBITUARY

Death Claims Arthur L. Humphrey

Death claimed Arthur L. Humphrey at his Edgewood home, Pittsburgh, Pa., on November 1, following a lingering illness. Comparatively inactive for the past year, Mr. Humphrey had been identified continuously with the Westinghouse Air Brake Company since his affiliation in 1903 as western manager, with headquarters in Chicago. From the general managership of the company, which he assumed in 1905,

A. L. Humphrey

at which time he moved to Pittsburgh, he rose successively to the position of vice-president and general manager in 1910; was elected a director in 1913; and succeeded to the presidency in 1919, at which time he also became a member of the executive committee. In this capacity he served until 1932, at which time he became an executive director, which position he relinquished in 1933 to become chairman of the board. This post he held until 1936, when he was elected chairman of the executive committee, preceding his retirement from active service effective December 31, 1938.

Mr. Humphrey contributed unstintingly

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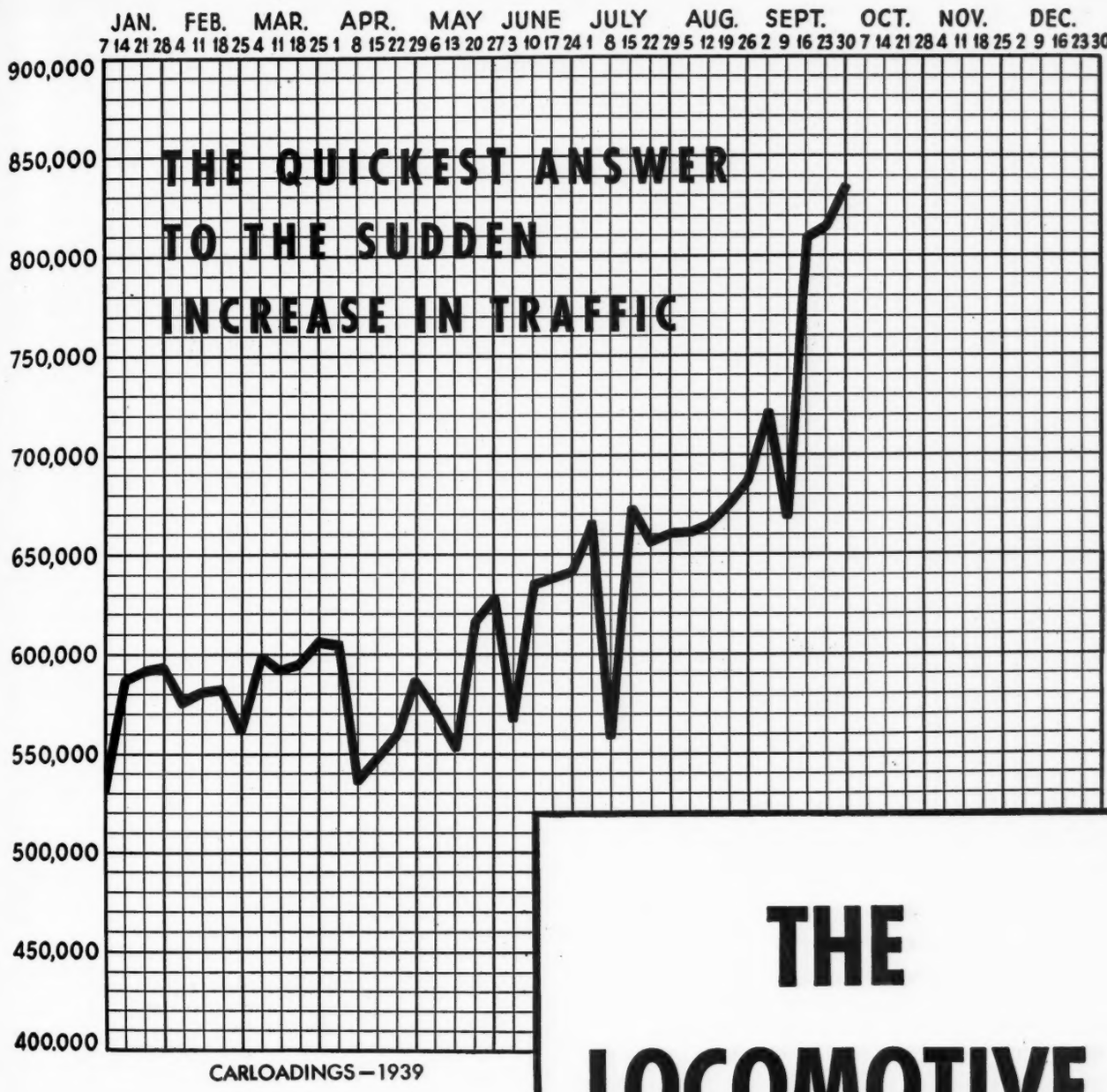
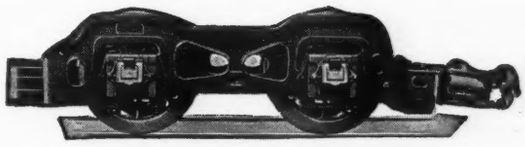


CARLOADINGS—1939

THE LOCOMOTIVE BOOSTER*



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The deluge of increased freight tonnage presents a serious problem. In many cases existing equipment is already hauling capacity loads. The quickest and cheapest answer for this problem is to supplement your existing locomotives with Booster power.

The Booster materially increases the tractive starting effort and enables you to maintain better speed on grades. Use it to increase your locomotive capacity and prepare for heavier tonnage.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK
CHICAGO
MONTREAL

to the industrial and civic welfare of Pittsburgh. He gained national prominence for his services during the World War, in which period his industrial knowledge and quality of leadership were invaluable. In addition to the extensive activities of the companies which he headed in producing munitions, he was industrial "staff expert" for Brig. Gen. C. C. Williams, chief of the Ordnance Department; he was also a member of the Committee on Labor of the Council of National Defense, as well as a member of the War Industries Board and the War Resources Committee.

Born in Buffalo, N. Y., June 12, 1860, the youngest of a family of eight, he was taken when one year of age to the farming region of the Midwest, where as a boy he attended the country schools of Maquoketa, Iowa, and Plattsmouth, Neb. He left the farm at the age of 14, taking a position as a drug clerk in Plattsmouth. In 1877 he became a machinist apprentice on the Burlington & Missouri River Railroad, a part of what is now known as the Chicago, Burlington & Quincy Railroad. At the age of 22 he organized a general machine shop and foundry in Seattle, Wash., which afterwards became the Moran Iron Works. He re-entered railway service and became constructing division foreman of the Mojave division of the Central Pacific, then master mechanic, and later superintendent motive power of the Colorado Midland. He became interested in politics and was elected to the Colorado House of Representatives in 1892. Re-elected, he served as Speaker of the House during his second term. He returned to railroad service on the Colorado & Southern in 1899 and in 1903 went to the Chicago & Alton as superintendent of motive power.

This position he relinquished to join the Westinghouse Air Brake Company in the capacity of western manager, with headquarters in Chicago, in 1903. In addition to his service with the Westinghouse Air Brake Company Mr. Humphrey was associated either as a director or an executive with the following organizations: Union Switch & Signal Company, Pittsburgh; Massey Concrete Products Corporation, Chicago; National Brake & Electric Company, Milwaukee; First National Bank of Swissvale, **Pa.; Swissvale** Trust Company; Westinghouse International Brake & Signal Company; Pittsburgh Aviation Industries, Inc.; American Brake Company of St. Louis; American Brake Shoe & Foundry Company; Canadian Westinghouse Company, Ltd., of Hamilton, Canada; Federal Reserve Bank of Cleveland, Pittsburgh Branch; First National Bank of Pittsburgh; Peoples Pittsburgh Trust Company; Pennsylvania Air Lines, Inc.; Safety Car Devices Company; Union Trust Company of Pittsburgh; Westinghouse Pacific Coast Brake Company of Emeryville, Cal.; Westinghouse Traction Brake Company, Bendix Aviation Company, Bendix Westinghouse Automotive Air Brake Company; Westinghouse Electric & Manufacturing Company; Wilmerding Corporation; trustee of the University of Pittsburgh.

Financial

CHARLES CITY WESTERN.—*Extension of R. F. C. Loan.*—This company has requested the Interstate Commerce Commission for its approval of the extension of the maturity date to July 1, 1941 of an unpaid balance of $100,000 on an original Reconstruction Finance Corporation loan of $140,000, maturing on November 14.

CHICAGO & NORTH WESTERN.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $1,800,000 of 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of $180,000 on December 15, in each of the years from 1940 to 1949, inclusive. The proceeds will be used in part payment of the purchase price of 500 70-ton coal cars and 300 50-ft. freight cars, the total cost of which will be $2,362,500.

CHICAGO GREAT WESTERN.—*Submission of Plan of Reorganization.*—Division 4 of the Interstate Commerce Commission has ordered that ballots be sent to all security holders of this company who are entitled to vote on the approval or rejection of a plan of reorganization and that the ballots be returned not later than January 31, 1940.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has denied a petition of a protective committee for the holders of preferred stock of this company asking that its reorganization proceedings be reopened for further hearing and the introduction of additional evidence pertaining to the company's earning power.

ERIE.—*Ratification of Co-Trustees.*—Division 4 of the Interstate Commerce Commission has ratified the appointment of Robert E. Woodruff as co-trustee of this company, succeeding Charles E. Denney, who has resigned to become president of the Northern Pacific.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has postponed from November 14, 1939, to May 14, 1940, the date for a public hearing on this company's reorganization plan.

ILLINOIS CENTRAL.—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for $7,800,000 of three per cent equipment trust certificates, maturing in 30 equal semi-annual installments.

NEW YORK CENTRAL.—*Equipment Trust Certificates and R. F. C. Financing.*—This company has asked the Interstate Commerce Commission to approve a plan whereby the Reconstruction Finance Corporation would purchase $9,000,000 of its 2½ per cent equipment trust certificates, maturing in 10 equal annual installments of $900,000 on December 1, in each of the years 1940 to 1949, inclusive. The proceeds will represent substantially all of the purchase price of 4,000 freight cars and five Diesel-electric switching locomotives. At the same time the company requested authority from the commission to assume liability for the certificates.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment by the Old Colony.*—The Old Colony and the New York, New Haven & Hartford, respectively, have asked the Interstate Commerce Commission for authority to abandon the lines and the operation of the lines comprising the so-called Boston Group, in and near the city of Boston, Mass., 97.1 miles. The petition points out that the revenues from the lines are insufficient to cover the maintenance, expenses and taxes and that the abandonment is, therefore, necessary to expedite the reorganization of the Old Colony.

SEABOARD AIR LINE.—*Extension of Operation.*—Division 4 of the Interstate Commerce Commission has authorized this company to resume operation over that portion of the so-called St. Marks branch extending from the Smith-Vereen connection track between mileposts 817.5 and 818 to the end of the branch at St. Marks, Fla., 2.7 miles.

SEABOARD AIR LINE.—*Equipment Trust Certificates and R. F. C. Financing.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to assume liability for $2,310,000 of three per cent equipment trust certificates, maturing in 15 equal annual installments of $154,000 on November 1 in each of the years from 1940 to 1954, inclusive. At the same time Division 4 authorized the Reconstruction Finance Corporation to purchase the certificates at par and accrued dividends.

WHEELING & LAKE ERIE.—*Bids on Equipment Trust Certificates.*—A banking syndicate headed by McMasters, Hutchison & Co., Chicago, was high bidder on October 30 for an issue of $1,200,000 of equipment trust certificates of this road maturing serially November 15, 1940, to 1949, inclusive. The high bid was 103.92 at 2½ per cent interest.

Average Prices of Stocks and Bonds

	Oct. 31	Last week	Last year
Average price of 20 representative railway stocks..	34.43	35.01	31.73
Average price of 20 representative railway bonds..	60.48	60.19	61.32

Dividends Declared

Cleveland & Pittsburgh.—7 Per Cent Guaranteed, 87½¢, quarterly; 4 Per Cent Guaranteed, 50¢, quarterly, both payable December 1 to holders November 10.

Detroit, Hillsdale & South Western.—$2.00, semi-annually, payable January 5 to holders of record December 20.

International Railways of Central America.—Preferred, $1.25, payable November 15 to holders of record November 1.

Norfolk & Western.—$2.50, quarterly, payable December 22 to holders of record December 4.

Philadelphia, Germantown & Norristown.—$1.50, payable December 15 to holders of record November 20.

Pittsburgh, Bessemer & Lake Erie.—Preferred, $1.50, payable December 1 to holders of record November 15.

Reading Company.—1st Preferred, 50¢, quarterly, payable December 14 to holders of record November 22.

West Jersey & Seashore.—Guaranteed, $1.50, semi-annually, payable December 1 to holders of record November 15.

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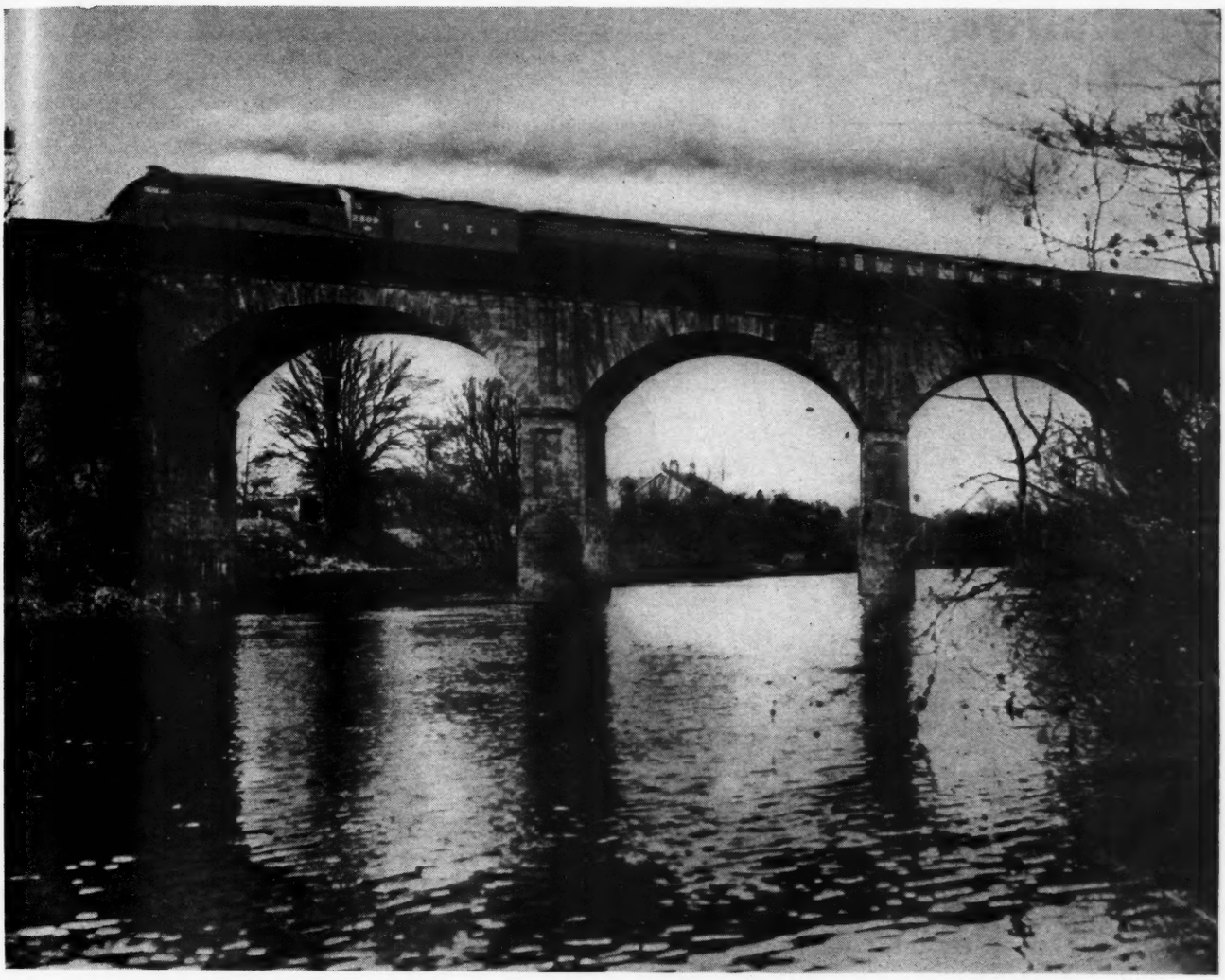
NO. 103 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



CROFT SPA VIADUCT

ENGLAND

This 471 ft. structure carries the Anglo-Scottish trunk route of the London & North Eastern Railway over the River Tees, in County Durham, at Croft Depot. The illustration shows the "Flying Scotsman" the London-Edinburgh daily express passing over this 100 year old viaduct, which at the time of its construction was one of the largest skew bridges in the world. The viaduct consists of four segmental arches, each of 44½ ft. square span and 12½ ft. on the skew, and is supported by three piers each of 9 ft. square span and 12½ ft. on the skew. » » » Another noteworthy engineering development is the Security Sectional Arch for locomotive fireboxes. Its basic design, which has been improved to keep pace with modern railroading, is the result of long experience and careful study by American Arch Company Engineers, and is today the standard on American Railroads. A complete arch, with every brick in place, is a sure way to lower fuel cost.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
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60 EAST 42nd STREET, NEW YORK, N. Y.

Locomotive Combustion Specialists

Railway Officers

EXECUTIVE

Robert E. Woodruff, whose appointment by the district court on October 18, as co-trustee and chief operating officer of the Erie, was announced in the *Railway Age* of October 28, has been appointed chief executive officer, with jurisdiction over all departments.

H. D. Barber, general manager of the Eastern district of the Erie, with headquarters at Jersey City, N. J., has been appointed vice-president in charge of operating and maintenance, with headquarters at Cleveland, Ohio, succeeding **Robert E. Woodruff,** who has been appointed chief executive officer. **Raymond C. Randall,** assistant general manager of the Eastern district, with headquarters at Jersey City, N. J., has been appointed assistant to vice-president, with headquarters at Cleveland, succeeding **P. W. Johnston,** whose appointment as general manager of the Eastern district is noted elsewhere in these columns.

Harold Dale Barber was born on December 31, 1891, at Norwalk, Ohio, and attended Alexander Hamilton Institute. After serving in various capacities for four years with the Wheeling & Lake Erie, Mr. Barber entered the service of the Erie on October 22, 1914, as stenographer in the superintendent's office at Meadville, Pa., being appointed to a similar position in the general manager's office at Cleve-

H. D. Barber

land, Ohio, two months later. He then served successively as secretary to assistant general manager, secretary to general manager, and assistant chief clerk to general manager, from February 8, 1915, to April 1, 1917, when he was appointed special agent, general manager's office, Youngstown, Ohio. Mr. Barber held the position of chief clerk, car service agent's office; assistant chief clerk, general superintendent's office; chief clerk, superintendent of transportation, Hornell, N. Y.; office manager, manager's office, Hornell region; regional auditor, manager's office, Hornell region; assistant chief clerk, vice-president's office, Jersey City, N. J.; office manager, Chicago region, Chicago, Ill.; and chief clerk to vice-president at Chicago, consecutively, from August 1, 1917, to September 1, 1926. On the latter date Mr. Barber was appointed general yardmaster at Chicago, becoming trainmaster at Huntington, Ind., on November 1, 1926. He became assistant superintendent at Chicago on October 1, 1928, and superintendent, Meadville division at Meadville, Pa., on January 20, 1930. On March 16, 1932, he was transferred as superintendent to the Meadville; Buffalo and Southwestern; Alleghany and Bradford divisions,

Raymond C. Randall

being appointed to a similar position on the Buffalo division at Buffalo, N. Y., on December 1, 1932. On June 1, 1934, Mr. Barber was appointed assistant general manager of the Western district at Youngstown, Ohio, and on April 16, 1936, became assistant to vice-president at Cleveland, the position he held until February 1, 1938, when he was appointed general manager of the Eastern district.

Mr. Randall was born at De Graff, Ohio, on September 18, 1888, and after a public school and business college education he entered railway service with the Erie on March 10, 1907, as a yard clerk at Marion, Ohio. He was promoted to assistant yardmaster at the same point in April, 1912, and in 1917 he became assistant general yardmaster, being further advanced to general yardmaster at Marion in the following year. In April, 1922, he was transferred to Hammond, Ind., and in November, 1926, he was promoted to trainmaster of the Chicago division, being further advanced to assistant superintendent at Chicago two years later. In October, 1928, Mr. Randall was transferred to Jersey City as assistant superintendent of terminals, being promoted to superintendent at the same point in 1929. He was appointed assistant general manager of the Western district at Youngstown in February, 1938.

FINANCIAL, LEGAL AND ACCOUNTING

Oscar Lincoln Clarke, land and tax commissioner of the Gulf, Colorado & Santa Fe, with headquarters at Galveston, Tex., retired on October 31. Mr. Clarke was born at Shippensburg, Pa., on November 8, 1863, and entered railroad service in 1890 as a clerk in the accounting department at Topeka, Kan. In 1899, he was promoted to traveling auditor at Hutchinson, Kan., and in 1900 to system accountant. Mr. Clarke was further advanced to land and tax commissioner of the Gulf, Colorado & Santa Fe in 1901, with headquarters at Galveston, and served in that capacity until his retirement, with the exception of a period from 1918 to 1920, during government control of the railroads, when he served as corporate secretary and auditor of the Gulf lines of the Santa Fe.

Eugene G. Nahler, general attorney on the St. Louis-San Francisco, has been promoted to general solicitor, with headquarters as before at St. Louis, Mo., a newly created position.

OPERATING

J. C. Mixon has been appointed terminal trainmaster, Northern division, Atlantic Coast Line, with headquarters at Charleston, S. C., succeeding **W. H. Butler,** retired.

J. W. Wilkes, assistant superintendent on the Canadian Pacific, with headquarters at Calgary, Alta., has been promoted to superintendent, with the same headquarters, succeeding **R. McKillop,** who has been granted an indefinite leave of absence.

J. G. Torian, a former Southern Pacific employee, and recently engaged in activities in connection with the National Railroad Adjustment Board at Chicago, has been appointed manager of personnel of the Southern Pacific, with headquarters at San Francisco, Cal., a newly created position.

D. J. Maley, superintendent of the Terminal division of the Erie, with headquarters at Jersey City, N. J., has been appointed assistant general manager, with the same headquarters, succeeding **R. C. Randall,** whose appointment as assistant to vice-president is noted elsewhere in these columns.

H. B. Smith, assistant trainmaster of the Norfolk division of the Norfolk & Western, with headquarters at Crewe, Va., has been transferred in the same capacity to Chillicothe, Ohio. **A. E. Johnson,** assistant trainmaster of the Pocahontas division at Iaeger, W. Va., has been transferred to Crewe to succeed Mr. Smith. **R. E. McGuire,** yardmaster at Weller Yard, Va., has been promoted to assistant trainmaster at Auville Yard, Iaeger, to succeed Mr. Johnson.

Harry E. Hinshaw, whose promotion to superintendent of the Hannibal division of the Chicago, Burlington & Quincy, with headquarters at Hannibal, Mo., was announced in the *Railway Age* of October 21, was born in Randolph County, Ind., on February 1, 1888, and entered railway service on June 1, 1907, as a yard clerk on the Lake Erie & Western (now part of the Nickel Plate) at New Castle, Ind. On May 15, 1908, he became a brakeman, and on July 19, 1909, he went with the Burlington as a brakeman at Mc-

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DESIGN and SPEED

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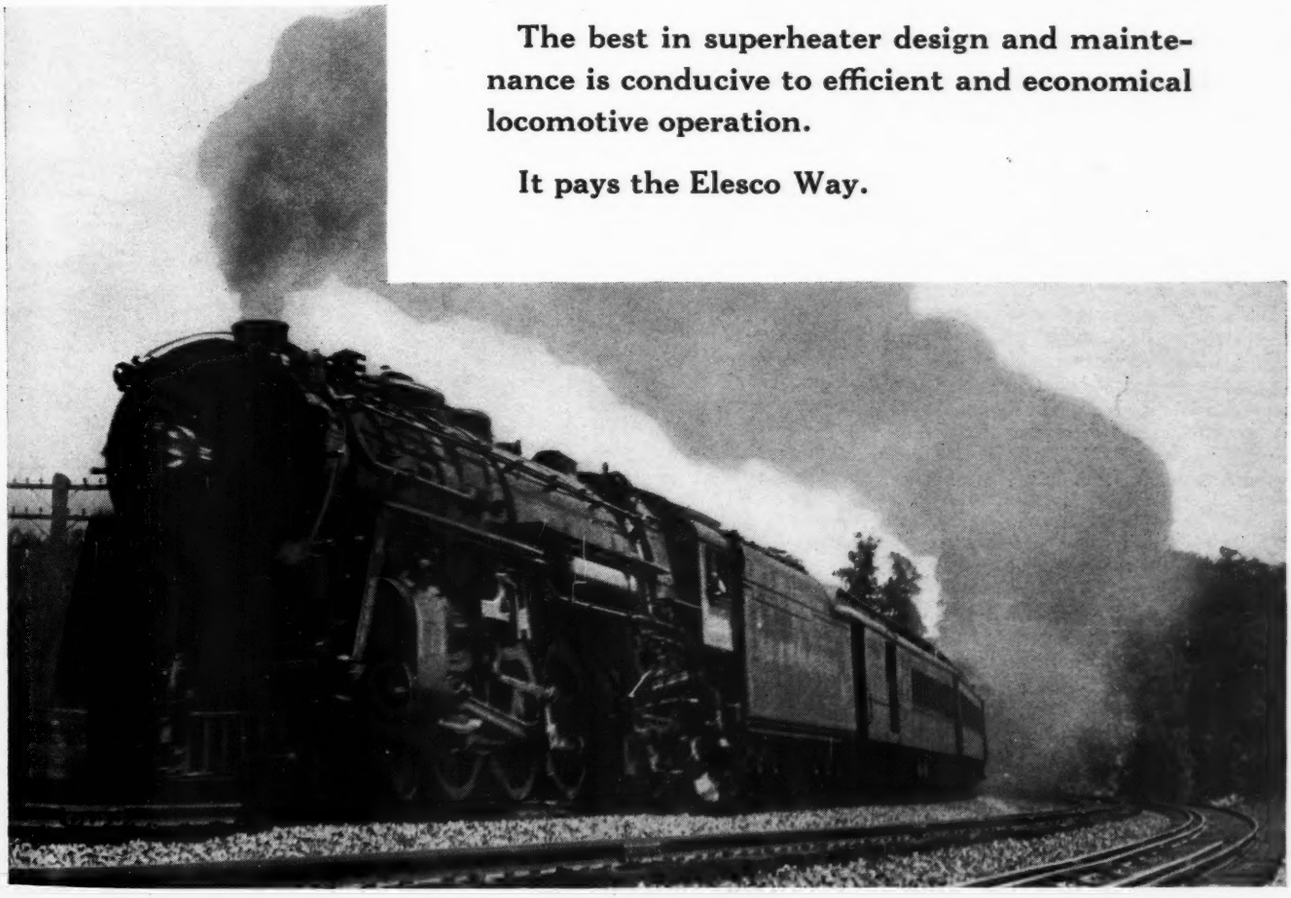

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Cook, Neb. Mr. Hinshaw was promoted to conductor on October 22, 1918, and on May 1, 1922, he was advanced to yardmaster at McCook. He was further advanced to trainmaster at Alliance, Neb., on February 1, 1923, and subsequently served in that position at Casper, Wyo., Wymore, Neb. and McCook. On October 4, 1933, Mr. Hinshaw was promoted to assistant superintendent, with headquarters at McCook, and on August 1, 1934, he was transferred to Wymore, Neb. On July 6, 1936, he was transferred to La Crosse, Wis., and on September 1, 1939, he was promoted to assistant to general manager, with headquarters at Omaha, Neb., the position he held until his recent promotion, which was effective October 16.

E. R. Shrader, trainmaster on the Chicago, Burlington & Quincy at Casper, Wyo., has been transferred to Alliance, Neb., succeeding **L. B. Denton,** whose promotion to assistant superintendent at Sheridan, Wyo., was announced in the *Railway Age* of October 21, and **W. S. Kerr,** assistant trainmaster at Lincoln, Neb., has been promoted to trainmaster at Casper, replacing Mr. Schrader. **W. A. Squires,** dispatcher at Hannibal, Mo., has been promoted to trainmaster at St. Joseph, Mo., relieving **G. W. Eckhardt,** whose promotion to assistant to general manager, with headquarters at Omaha, Neb., was announced in the *Railway Age* of October 21.

K. A. Borntrager has been appointed superintendent of the Ohio Central division of the New York Central System, with headquarters at Columbus, Ohio, succeeding **J. J. Daley,** who has been transferred in the same capacity to the Syracuse division, with headquarters at Syracuse, N. Y., replacing **C. E. Olp,** who has been granted a leave of absence. **M. R. Dwyer** has been appointed assistant superintendent of the Buffalo division. **J. E. Guilfoyle** has been appointed trainmaster of the Buffalo division, and **F. R. Stafford** has been appointed assistant trainmaster of that division.

Coincident with the consolidation on November 1, of the telegraph and signal departments of the Chicago & North Western, **Stanley E. Noble,** signal engineer, has been appointed superintendent of telegraph and signals, a newly-created position, with headquarters as before at Chicago. **O. Scott Tomkins,** assistant signal engineer, has been appointed assistant superintendent of telegraph and signals, with headquarters at Chicago, and **M. E. Moyer,** assistant to the general manager of the Western Union at Omaha, Neb., has been appointed assistant superintendent of telegraph and signals on the North Western, with headquarters at Chicago.

Mr. Noble was born at West Pittston, Pa., on May 22, 1888, and graduated in electrical engineering from Pennsylvania State College in 1915. During the summer vacation preceding his graduation, he entered railway service as a helper in a signal construction gang on the Delaware, Lackawanna & Western. After completing his college course, he returned to the Lackawanna on June 15, 1915, as an electrician's helper at Scranton, Pa., and in December, 1915, he was transferred to the signal department of the Scranton division as an assistant wireman, later becoming a signal wireman. In September, 1917, he went

Stanley E. Noble

with the North Western as a signal draftsman in the office of the signal engineer at Chicago. In April, 1921, he was appointed signal estimator, and after serving in this capacity for a year, was promoted to chief draftsman. Mr. Noble was further advanced to assistant engineer, signal department, in October, 1924, and in December, 1926, he was appointed general signal inspector. On January 1, 1928, he was promoted to assistant signal engineer, with headquarters at Chicago and on October 20, 1937, he was advanced to signal engineer, with the same headquarters.

P. W. Johnston, assistant to vice-president of the Erie, with headquarters at Cleveland, Ohio, has been appointed general manager of the Eastern district, with headquarters at Jersey City, N. J., succeeding **H. D. Barber,** whose appointment as vice-president in charge of operating and maintenance is noted elsewhere in these columns. Mr. Johnston was born on July 5, 1892, at Transfer, Pa., and attended Allegheny College, Meadville, Pa. He entered the service of the Erie on July 1, 1909, serving as a clerk and agent at

P. W. Johnston

various points during vacations from school. In 1918, he was appointed station supervisor at Meadville and in the following year he was advanced to rules examiner, with the same headquarters. In 1920, Mr. Johnston was further promoted to supervisor of station service, with headquarters at Hornell, N. Y. In the following year he was appointed trainmaster at Elmira, N. Y., and in 1922, he was transferred to Hornell, being appointed chief clerk to the superintendent at Meadville in 1923. Four years later Mr. Johnston again became a trainmaster and after two years in this capacity he was promoted to assistant superintendent of transportation. In 1933 he was further advanced to superintendent of transportation, with headquarters at Cleveland, and in 1936, he was appointed assistant general manager of the Western district, with headquarters at Youngstown. Mr. Johnston was appointed assistant to vice-president at Cleveland in February, 1938.

W. R. Devenish, general superintendent of transportation of the Western region of the Canadian National, with headquarters at Winnipeg, Man., has been appointed general manager of the region. **J. H. McKinnon,** superintendent of the Calgary division at Calgary, Alta., has

W. R. Devenish

been appointed general superintendent of the Alberta district at Edmonton. Alta., succeeding **W. C. Owens,** who has been appointed to succeed Mr. Devenish as general superintendent of transportation at Winnipeg. **Sherman Smith,** assistant superintendent of the Edmonton division at Edmonton, Alta., has been appointed superintendent of the Calgary division, succeeding Mr. McKinnon.

Mr. Devenish was born in Ireland on November 21, 1882, and was educated at St. Columbus College and Trinity College, Dublin. After previous experience as engineer in railway work, he engaged in construction activities with the Transcontinental Railway in 1912 and the following year became division engineer at Moncton, N. B., for the Intercolonial. After holding supervisory posts at Campbellton, N. B., and Moncton, he was appointed general superintendent for the Canadian National at Toronto and later at North Bay, Ont. In 1928 Mr. Devenish became general superintendent of the Alberta district, with headquarters at Edmonton, Alta., and in 1936 was appointed general superintendent of transportation for the Western region, with headquarters at Winnipeg,

which position he held until his present promotion.

Walter Clark Owens was born in Manitou, Man., on October 29, 1884, and entered transportation service on May 1, 1904,

W. C. Owens

serving as clerk, brakeman, conductor, trainmaster and assistant superintendent of the Canadian Northern at various points in Western Canada. In 1927 he was appointed superintendent of the Winnipeg terminal division of the Canadian National and in 1930 became superintendent of freight train service, on the staff of the chief of transportation, at Montreal. In the following year he was appointed general superintendent of the Saskatchewan district, with headquarters at Saskatoon, and was transferred in the same capacity to the Alberta district at Edmonton in January, 1936.

TRAFFIC

J. X. Andersen has been appointed assistant general freight agent in charge of divisions on the Illinois Terminal at St. Louis, Mo., a newly created position.

Elvin M. Woodworth, traffic agent for the Chicago Great Western at New York, has been promoted to general agent at Boston, Mass., a newly created position.

E. H. Browne, commercial agent, Seaboard Air Line, with headquarters at Winter Garden, Fla., has been appointed division freight agent at Jacksonville, Fla. The position of district freight agent at Jacksonville has been abolished.

H. C. James, assistant general passenger agent of the Canadian Pacific, with headquarters at Montreal, Que., has been transferred in the same capacity to the Ontario district, with headquarters at Toronto, Ont., effective November 1, succeeding the late **C. B. Andrews.**

W. F. Kruse, traveling freight agent for the Chesapeake & Ohio at Kansas City, Mo., has been promoted to general agent at St. Louis, Mo., succeeding **D. L. O'Connor,** who has been transferred to Cleveland, Ohio. Mr. O'Connor replaces **C. C. Divine,** who retired on November 1.

E. L. Setzer has been appointed assistant freight traffic manager of the Seaboard Air Line, with headquarters at Atlanta, Ga., succeeding **F. C. Cheney,** who has been appointed assistant to chief freight traffic officer, with headquarters at Norfolk, Va. **A. P. Courvoisie** has been appointed district freight agent, with headquarters at Greenville, S. C., succeeding **B. J. King,** who has been appointed division freight agent at Atlanta, Ga. The position of commercial agent has been abolished.

MECHANICAL

Alexander Peers, master mechanic, Quebec district, Canadian Pacific, with headquarters at Montreal, Que., has retired under the company's pension rules, effective October 31. **R. V. Carleton,** division master mechanic, Ontario district, with headquarters at Toronto, Ont., has been appointed master mechanic of the Quebec district.

O. J. Protz, assistant master mechanic on the Chicago & North Western at Clinton, Iowa, has been promoted to superintendent of the locomotive and car shops at Chicago, succeeding **George H. Logan,** who has retired.

ENGINEERING AND SIGNALING

H. A. Dixon, chief engineer of the Western region of the Canadian National, with headquarters at Winnipeg, Man., has been appointed chief engineer of operation for the system, with headquarters at Montreal, Que., effective January 1, 1940, succeeding **C. B. Brown,** who will retire on pension. Mr. Dixon was born at Sand Hill, Ont., October 7, 1878, and was graduated from the School of Practical Science at Toronto and received his B. A. degree at the University of Toronto with honors in science. After working as a land surveyor in Ontario and Manitoba he joined the Canadian Northern at Winnipeg as a draftsman in 1903 and shortly afterwards became resident engineer. After serving in a supervisory capacity over engineering activities at Maryfield, Sask., Red Pass Junction, Resplendent, B. C., and Vancouver, B. C., he was advanced to chief engineer of the Western region, with headquarters at Winnipeg, the position he held until his recent promotion.

H. A. Dixon

Mr. Brown was born on August 27, 1879, at Ithaca, N. Y., and was graduated from Cornell University in 1901 with a degree in civil engineering. He entered railway service in the same year as a draftsman for the Canadian Pacific, later serving as rodman and assistant engineer of the bridge department. Mr. Brown be-

C. B. Brown

came resident engineer on the Ontario division in 1902; assistant division engineer at Calgary, Alta., in 1904; and division engineer at St. John, N. B., in 1906, later being transferred in the latter capacity to Montreal. In 1912 Mr. Brown was promoted to principal assistant engineer of the Eastern lines and from 1913 to 1917 he was chief engineer of the Canadian Government Railways at Moncton, N. B. In 1917 he was promoted to assistant general manager of the Eastern lines and chief engineer of all lines. In 1918 he was appointed chief engineer of the Eastern lines of the Canadian National, which included what was formerly known as the Canadian Government Railways. In 1920 Mr. Brown was appointed engineering assistant to the vice-president, the position he held until March, 1923, when he became chief engineer of operation.

I. L. Pyle, who has been appointed chief engineer of the Chesapeake & Ohio at Richmond, Va., as reported in the *Railway Age* of September 23, was born in Philadelphia, Pa., and educated in that city. He entered the service of the Chesapeake

I. L. Pyle

& Ohio on July 1, 1902, at Huntington, W. Va., and served successively until April 1, 1918, as levelman, transitman, draftsman and resident engineer on various construc-

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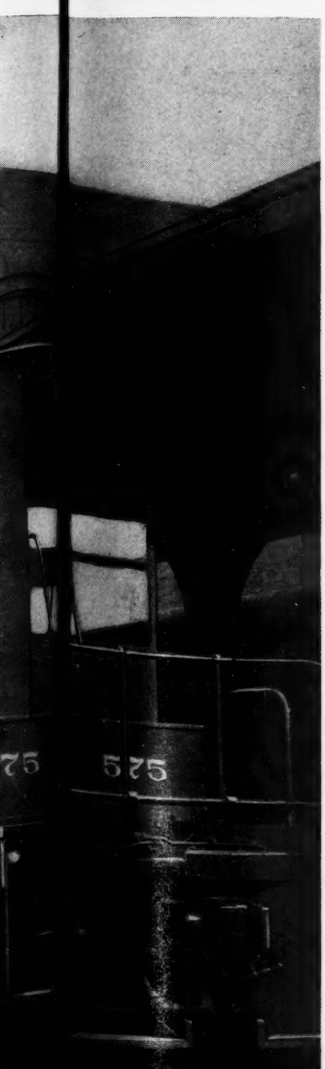

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tion projects between Hinton, W. Va., and Cincinnati, Ohio. Mr. Pyle went to Richmond on April 1, 1918, as assistant engineer and three years later was appointed assistant engineer of construction. He became assistant to chief engineer on January 1, 1923, and on March 1, 1923, was promoted to assistant chief engineer, in which position he served until his recent appointment as chief engineer.

W. E. Bickel has been appointed engineer of water service of the Denver & Rio Grande Western, with headquarters at Denver, Colo., succeeding **C. E. Trammell.**

PURCHASES AND STORES

George J. Fleisch, general traveling storekeeper on the Atchison, Topeka & Santa Fe, with headquarters at Topeka, Kan., retired on October 1.

Samuel A. Hayden, assistant purchasing agent and general storekeeper of the Missouri-Kansas-Texas, with headquarters

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Samuel A. Hayden

at St. Louis, Mo., has been promoted to purchasing agent, with the same headquarters, succeeding **George E. Scott,** whose resignation to become vice-president and assistant sales manager of the Scullin Steel Company, St. Louis, was announced in the *Railway Age* of September 23, and **H. J. Blum,** assistant general storekeeper, has been advanced to general storekeeper, with headquarters as before at Parsons, Kan.

Mr. Hayden was born at St. Paul, Kan., on April 18, 1896, and entered railway service on September 1, 1911, as a machinist apprentice on the Katy in the shops at Parsons. Two years later he was transferred to the stores department, where he advanced through various clerical positions to that of chief clerk to the general storekeeper in July, 1923. Mr. Hayden was further promoted to general storekeeper, with headquarters at Parsons, on September 1, 1933, and on November 1, 1937, he was advanced to assistant purchasing agent and general storekeeper, with headquarters at St. Louis.

Clare R. Holmes, district storekeeper of the Coast lines of the Atchison, Topeka & Santa Fe, with headquarters at San Bernardino, Cal., has been promoted to general storekeeper for the system, with headquarters at Topeka, Kan., replacing **Horace E. Ray,** who retired on November 1. **F. R. Schwartz,** purchasing agent, with headquarters at Los Angeles, Cal., has been appointed purchasing agent and storekeeper, with headquarters at San Bernardino, succeeding to the duties of Mr. Holmes, and **D. E. Considine,** invoice and voucher clerk in the purchasing department at Los Angeles, has been promoted to purchasing agent at that point, relieving Mr. Schwartz. **L. F. Clark,** chief clerk in the purchasing department at San Francisco, Cal., has been promoted to purchasing agent at that point, replacing **A. Moreton,** who has retired. **Franklin J. Steinberger,** traveling storekeeper of the Coast lines, has been advanced to division storekeeper at Albuquerque, N. M., succeeding **A. B. Wachter,** who has retired. **Albert M. McHenry,** division storekeeper at Winslow, Ariz., has been transferred to Redondo Junction, Cal., replacing **E. P. Stewart,** who has retired, and **L. H. Streeter,** division storekeeper at Ottawa, Kan., has been transferred to Winslow, Ariz., relieving Mr. McHenry.

SPECIAL

Peter Young, general superintendent of the reclamation plant of the Atchison, Topeka & Santa Fe at Corwith, Ill., has been promoted to supervisor of reclamation, with headquarters at Chicago, a newly created position.

J. H. Fountain, who has been in charge of Canadian National and Central Vermont publicity in the New England states for the past 11 years, with headquarters at St. Albans, Vt., has been appointed Canadian National publicity representative for the eastern United States, with headquarters at New York.

OBITUARY

C. E. Marchell, general auditor of the Canadian Pacific, with headquarters at Montreal, Que., died on October 27 at his office at the age of 38. Mr. Marchell was born at Hamilton, Ont., on May 3, 1901, and began his railway career with the Toronto, Hamilton & Buffalo. In April, 1926, he joined the staff of the Canadian Pacific in the joint facilities bureau. Three years later he was promoted to joint facilities accountant, and in July, 1932, he became general auditor of the company, at Montreal, the position he held until his death.

Guy E. Hustis, who retired on October 1, 1930, as comptroller of the Delaware, Lackawanna & Western, died on October 28 at his home in East Orange, N. J., at the age of 78. Prior to entering the service of the Lackawanna, Mr. Hustis was employed, successively, in the car service department of the New York Central; as superintendent of the Beech Creek (now part of the New York Central); as general superintendent of the West Shore; and as general western freight agent of the New York, New Haven & Hartford. Mr. Hustis entered the service of the Lackawanna on December 18, 1905, as general auditor. During federal control he became federal auditor of the Lackawanna and upon return of the railroads to private control on March 1, 1920, he was promoted to comptroller, which position he held until his retirement on October 1, 1930, after 45 years of railroad service.

Arthur A. Tisdale, who retired in 1932 as general manager of the Western region of the Canadian National, with headquarters at Winnipeg, Man., died in that city on October 31, after a short illness. He was 65 years old.

Frank M. Whitaker, retired vice-president in charge of traffic of the Chesapeake & Ohio, the Pere Marquette and the New York, Chicago & St. Louis, died of a heart attack on October 25 in Spokane, Wash., at the age of 73. Mr. Whitaker retired on July 1, 1937, after 52 years of service.

Hans Ibsen, who retired on February 1, 1932, as consulting bridge engineer of the Michigan Central, with headquarters at Detroit, Mich., died on October 22 at his home in Detroit after an illness of

Hans Ibsen

about three years. Mr. Ibsen was born in Bergen, Norway, on February 1, 1862, and received his technical education in that country. He came to the United States at the age of 20 years, and engaged in preliminary work on a projected line of railroad in Pennsylvania. For a time Mr. Ibsen served as a draftsman with the Riverside Bridge and Iron Works at Paterson, N. J., and later as a draftsman in the office of the city engineer of St. Paul, Minn. In 1889 he went to Norway for further technical study, returning to the United States in May, 1890, to enter the bridge department of the Michigan Central, later becoming chief draftsman and assistant bridge engineer. In August, 1905, Mr. Ibsen was promoted to acting bridge engineer, with headquarters at Detroit, and later was appointed bridge engineer. In November, 1916, he was appointed special bridge engineer for the Michigan Central to design a new bridge over the Niagara Gorge at Suspension Bridge, N. Y., and retained this title until 1927, when he was appointed consulting bridge engineer, with headquarters as before at Detroit, the position he held until his retirement.